



Imagine 2200

Future Stories

from

YES!

Journalism for People Building a Better World

and

Grist

***Dedicated to Telling Stories of
Climate Solutions and a Just Future***

The 2024 Collection

Proposal Only

Proof Copy

*Awaiting editorial input and approval
from YES! And Grist Publishers*

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Introduction

About YES! Magazine

Through rigorous reporting on the positive ways communities are responding to social problems and insightful commentary that sparks constructive discourse, YES! Media inspires people to build a more just, sustainable, and compassionate world. It is independent and nonpartisan. Their explanatory journalism analyzes societal problems in terms of their root causes and explores opportunities for systemic, structural change. Their stories uncover environmental, economic, and social justice intersections, with solutions reporting spotlighting the ideas and initiatives of people building a better world. Their commentaries address dominant economic, political, and social structures and consider alternative ways of thinking that can produce a more equitable and Earth-friendly world. In April, 2024, for *Climate Futures Week*, YES! sent an email to their subscribers with links to the dozen stories that are offered here.

For additional information about YES! and to sign-up for their free weekly newsletter: yesmagazine.org

About Grist Magazine

Grist is a nonprofit, independent media organization dedicated to highlighting climate solutions and uncovering environmental injustices. Since 1999, we have used the power of journalism to engage the public about the perils of the most existential threat we face.

When we want to know what's happening in the world, we turn to journalism. When we want to escape from reality, we turn to fiction. But both are forms of storytelling. And both are necessary for the critical work of bringing about climate solutions. "I believe it's helpful to have depictions of the world we want," says Tory Stephens, climate fiction creative manager at *Grist*. "We're trying to show that another world is possible."

Stephens leads an annual writing contest called "*Imagine 2200: Climate Fiction for Future Ancestors*." Now in its fourth year, the contest seeks to prompt reflection and action on climate change. Stephens says the goal of the initiative is, in part, "advocating and helping people realize their visions and dreams through writing." The exercise is designed to be beneficial for both the writers and the readers. Climate fiction is a collective endeavor. We can't imagine a better world alone, nor can we build one. Climate fiction can prompt rich discussions through enlightening questions like "What does hope look like?" or "What does a decolonized future look like?" And while journalism can ask these questions, fiction actually builds out these worlds to show them in all their glorious detail.

But who gets to choose what's realistic? Isn't reality what we collectively make it? Is the status quo something we really want to bring into the future?

The writers of the twelve stories in part one of this book are in the business of radical reimagining. "We're trying to show a world of abundance, where the characters are the folks that have been marginalized.... Those folks are depicted in hero terms, owning the world, and bringing forth a world that others want to live by.... There's just so many different perspectives on what a clean, green, and just world looks like," Stephens says.

Grist has received more than 3,000 entries to its writing competition in its first three years.

Why the year 2200? It may seem oddly specific, and also too far ahead to be able to grasp. But that's exactly why *Grist* chose that year—to help us break free of the limits of our collective imagination. We need to overcome the myopic perspectives that Western society is so mired in.... In deciding on a timeline, editors looked to Indigenous frameworks for being good stewards of the Earth, not just for our own sake, or for individual outcomes, but for seven or eight generations of future ancestors. “I think there's deep wisdom in looking internally for future societies and planning that far ahead,” Stephens says. “You can dream big and no one can tell you that's not going to be achieved by that time, because we all just don't know.” These stories, then, are like lenses to broaden our horizons. They are meant to tease our imaginations and prompt us all to dream bigger and more boldly.

Stephens compares dreams to seeds—each one with the potential to grow into something real. More justice. Cleaner technologies. The centering of frontline communities. “The thing I like about these stories—and the reason I advocate for climate storytelling and climate fiction—is I think we need a million more flowers to bloom, or stories to bloom.”

For additional information about *Grist* and to sign-up for their free weekly newsletter: grist.org

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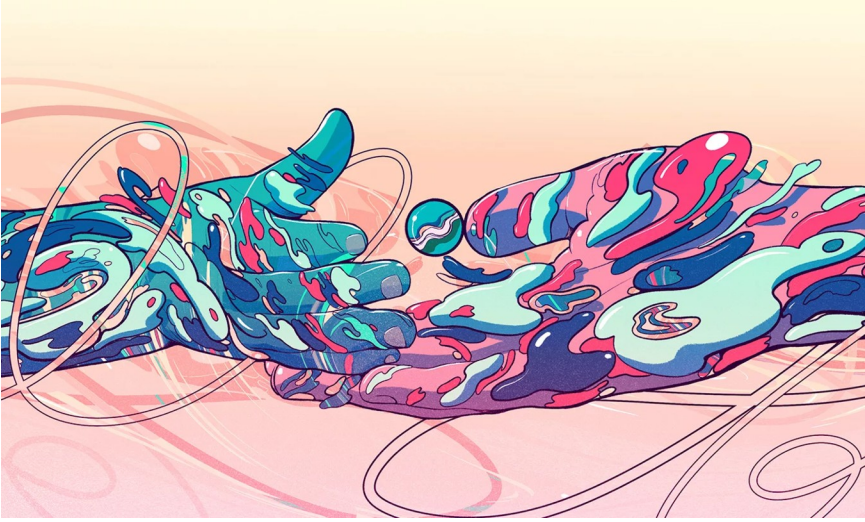
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Note:

Formatting of stories has been changed from original online presentation for smoother book reading. To see the original offering, go to the *Grist* website: grist.org/imagine2200-climate-fiction-2024





Chapter One

The Imperfect Blue Marble

*Propelled by a discerning non-verbal child,
a craft gets elevated to an act of devotion.*

Author: Rae Mariz

Illustrator: Carolina Rodriguez Fuenmayor

Lærke's first word was *wing*.

She lay cradled between the moss and her mama, watching the branches cut the sky in precise patterns. Her poor ma Suzume had fallen asleep after chasing the child around the farm, trying to keep Lærke's tongue out of the beehive. The city's colorful turbine balloons hovered high in

the atmosphere, silently harvesting wind—and look there, the giggle of a single cumulonimbus in an otherwise blue sky.

Little Lærke's developing mind observed the canopy overhead, babbling her wordless song above the comforting thunder of her mother's snores. Then the word took shape on her lips and flew. *Wing*. Out into the world.

Auntie Cade looked up from the sacred text her needle had been working, the folds of fabric bunched in her lap. She'd been humming the ballad as she stitched those lessons of the living land, quietly harmonizing with the baby's joyful yoller, but fell silent when she heard the word. The child's first!

She followed Lærke's gaze up to the sky, expecting to identify which dot in the kaleidoscope of community kites had caught the child's attention, then eased herself down beside the babe to see from her perspective. Which of those turbine balloons or spinning kites and whipping dragontails in the skies had teased the first word from the baby's lips ...?

Maybe that one? One of the neighbor's blimp turbine designs had dual blades that flashed like hummingbird wings—not the most efficient design, but since when has creativity been overly concerned with efficiency? It was certainly eye-catching.

Instead, as Auntie Cade nestled back close to the baby, cheek-to-cheek, Lærke showed her auntie a butterfly wing swirling dust motes ignited by the sunlight.

"That's right, *wing*," Auntie Cade affirmed, and pulled The Field Guide blanket up over the three of them. They snuggled in under the weight of wisdoms passed from auntie to auntie—woven, crafted, compiled—while Lærke and her auntie watched the butterfly dance in the golden pollen.

We always say a child's first word is a gift.

And look at that.

...

You're ... hm. You're not watching the butterfly. Look

...

The blue of the butterfly wing is not a pigment, the color is formed by a delicate structure that refracts light itself, much like the blue of the sky. No real surprise that the beauty of chaos has been represented in the motion of—

You seem distracted. What are you looking for? Me? You're wondering who this person is, telling you to look here and there. You want to know who's telling the story? Fine.

I am a storyteller. The storyteller. This story's teller.

There's no use scanning the edges of the scene trying to find me. I'm not perched on a boulder beside these three as they're experiencing this intimate, poignant moment on this lovely day. You think I'm up in a tree looking down on the scene? With these knees? Please.

I'm omniscient, but I'm not a creeper.

Some storytellers tailor their tales to what their listeners want. My training taught me to look for the story the listener didn't know they needed.

You can most often find me in the Tangle, the place in the city where paths converge. I don't have to be present at every moment to know what's going on. People tell me things. I have a trustworthy face.

Step closer. Let me get a good look at you. Knowing who we're telling the story to is part of the craft: "The storyteller assesses their audience." Watches the people as they mingle in the Tangle. Notes the dress of the passerby, their manner. A storyteller wouldn't tell the same story to the lonely child seeking solace in the storyteller's lap as they would to the bawdy crowd on their way to a fertility show.

Or at least, I wouldn't tell it in the same way.

Any decent storyteller has this skill, it's the same observations about character that we weave into our tales. *Is the listener in a rush? Are they looking for escape? Do they need a single golden spiderweb thread to sew together something frayed inside?*

Some storytellers tailor their tales to what their listeners want. My training taught me to look for the story the listener didn't know they needed.

And you. A *reader* from the tail end of the blip era, what story do you need from me? Am I even able to tell you a story you will understand? You're most likely steeped in the narrative techniques of the settler literatures of the time. Tricky ... but difficult things are not impossible, and I wouldn't be a storyteller if I didn't like a challenge. Besides, you're in luck. Though the story trends popular in the 21st century have long gone out of style, I just so happen to enjoy experimenting with this outdated form. I'm afraid that most current storytellers have found that the simplistic structures you're familiar with often fail to capture our children's imaginations, so they've largely been left for archival scholars to catalog as a hobby. I have a friend who does this. Winslowe. He finds it relaxing. *Hero goes on a journey* or *A stranger comes to town*. His husband Jibril finds it tedious, but I admire people who are passionate about their passions! Whatever makes him happy, we agree.

Let me tell you about their son, Ben.

Aunties aren't supposed to have favorites, and they don't. Hierarchical thinking isn't actually natural to human cognition, and there isn't any scarcity of resources to compete over. Especially in regards to a person's capacity for love.

If you ask Auntie Cade though, and I have (storytellers ask the *most* impertinent questions, get used to it), she was uniquely grateful for Ben. We all were, but part of that was due to Auntie Cade's ... interpretations ... as she decoded the intricacies of his language. It turned out to not be a private language, like maybe his parents and peers, cousins, siblings, storytellers, neighbors, and neithers assumed. Ben was in communication with all the unheard and mostly unseen, outside the spectrum of general human understanding.

I don't want to make this telling of a slight, autistic Black boy to sound unnecessarily mystical or mythical. He's a person. But sometimes one's love for a person embellishes their qualities—they swell with our regard, inflating like a generator-blimp before we hoist them high. Once a storyteller gets their hands on a person, they make the character appear larger than life. Is this the mark of fine craftsmanship or a rookie mistake? (You can tell me, it won't hurt my feelings.) Why shouldn't the loving renderings of an artist's brush caress a child, stroke his cheek, and tickle his armpits?

Ben would hate it, so that's one reason not to. And the only reason we need.

Of all the children she'd taught and inspired, nurtured and guided and delighted in, Auntie Cade recognized that she'd learned the most from Ben. She told us that Ben showed her things; he'd shown them to all of us, but sometimes it required an auntie's attention to understand a child.

Our culture puts a lot of weight on a baby's first word. (See above.) Not so much *what* the baby says, mostly *that* the baby says. That they've arrived at a phase of language acquisition which marks their inclusion in the community conversation.

Feral cats don't meow. Or so the story goes.

We talk about *everything*. People do. The ASL sign for a hearing person is the same as the sign for TALKING. We're always talking. Especially the people I know. It varies from neighborhood to neighborhood, culture to culture. But for the most part, we've evolved, especially since your time—those blip generations when decisions were made by might, hierarchical decree, or just not made at all—we've learned how to talk things out.

When there is a problem, we gather. And talk. Not to be heard, but to discuss. We approach the discussion acknowledging that there is a problem, and that the solution is not yet known, because if any one person knew how to solve

that problem, it wouldn't be an issue, now, would it? If it were a problem easily solved, we would've made quick work of ensuring it *wasn't* a problem. We would instead be off braiding bread or rinsing the vegetable inks from the pages of a library book and searching the catalog for a new one to print—living our lives. No, if we're there in that room, in that clearing, filling that field, meeting in a sports arena—then we have a problem so tricky that it needs everyone's input. Children as young as 6 years old have contributed to civic matters. Do voices get raised? Sure. Do men burst into tears? Quite often. Do passions drown out reasoned accounts? Eh, not as often as you fear. Our children learn to listen at a young age and become adept in the skill as adults. I see it straining your imagination, stranger-comes-to-town, that the opinions of each individual in a mob could be worthy of respect. Do not feel bad about your disability, we see it as a failure of education ... one of the many things lost in the blip generations, along with the 83% loss of biodiversity in the sixth mass extinction event you are currently living through.

Your white sciences change the definitions and shift the goal posts every time a community of creatures approximates those arbitrary markers for intelligence, sentience, life. Every time.

But we were talking about Ben. How could a culture of loudmouths appreciate a quiet kid? Who grew to be a silent adult? Because, unlike the “domesticated” cat, most of the wild creatures we share a planet with didn't go out of their way to try and learn our language. To vocalize their need, to pitch their voices like a baby's cry, to trigger a physiological response that requires immediate attention from people who hear it. Feral cats are silent because they don't want to attract attention to themselves or communicate with people. They want to be left the hell alone.

Animals have rich languages of scents and gestures and vocalization patterns. Able to communicate between themselves and with each other, and very few of *us* have gone

out of our way to understand the linguistic complexities of our fellows. Not with the same determination of the cats, at least. “But could those things really be considered *language*?” I hear one of you say. Your white sciences change the definitions and shift the goal posts every time a community of creatures approximates those arbitrary markers for intelligence, sentience, life. Every time. To ensure that only human people stand in the circle—and terrifyingly often, it’s only the people with similar qualities of those enforcing the definitions who are allowed in. Personally, I tend to wonder if that culture built on exclusion, exhausting itself to enforce artificial borders (or otherwise centering a single person’s narrative thread, consequently relegating the rest to less important supporting characters and background greenery) may have led to the worldview that brought your generation so close to ending the ever-generating world.

So yes, I say language.

Listen to birdsong as you walk through a place with birds ... I was going to say “the woods” but that might be difficult for you to find, presently. Things were dire at the tail end of the blip era, as I understand it, you were so very successful in excluding everything unlike your kind ... Anyway, walk among birds. Listen to their trilling call-and-response. You can be sure that they are talking, and I guarantee they are talking *about you*. You are big news in the woods. They are not quite sure what to make of you. Are you a predator? What have you done to assure the birds that you are not a threat? It’s easy enough to show them. Their birdsong is asking. They are waiting for a reply.

Ben’s first “word” was a reply. Our culture has a parallel language system of gestures; yours might, too. A thumbs-up, a corny salute. A peace sign, a fuck you. Our neighborhood has a gesture of gratitude—two fingers pressed to one’s own lips. Thank you. And one to express a wordless need—hands cupped into an empty bowl. You would probably try to find the words for this feeling ... general

malaise, vague disappointment, unfulfilled desire, a soft sense of regret. You know the feeling ... it's just a nameless funk. Instead of trying to locate the feeling, to understand it—or jerkily act out in desperation to feel anything else—our people tend to just signal the inner turmoil we're experiencing by cupping our hands into an empty bowl. Close to the body if we want to be left alone with the feeling, extended out from the body if we need someone to pull us out of it. It's useful. Easy to communicate. Both for one's self and to others. The prevalence of tragic instances of ill-advised bang-cutting in our society has diminished, at least.

When Ben was maybe 3—long past the age most expect to welcome their children through the rites of their first word—Auntie Cade was walking alongside Ben during their daily route through the Tangle. She would follow where he led, always close enough should he need her, but never insisting on holding his hand in the crowded public space. He didn't like for his hand to be held and it's easy enough to allow small children their autonomy generally, Ben in particular. His morning routine was sacred to him and he was never at risk of running off.

On this day, Auntie Cade witnessed Ben making his quiet wander to his favorite places. He watched the glassblower turn sand into exquisite shapes—mesmerized by the lava blobs birthed in fire and brought to life with breath. The glassblower was a small man with thinning hair and a quiet voice. He did his work, seemingly indifferent to Ben's constant presence—a feat, since people are otherwise hyper-aware of a 3-year-old in the vicinity of molten stoves and display shelves of delicate glassworks. But the glassblower had come to an agreement with Ben, an arrangement. Each day, the glassmaker dropped a single glass marble into a large, wide bowl just as Ben was ready to leave ... in gratitude for the child's attention and as thanks for him not touching all his stuff or breaking anything.

Ben listened to the smooth, nearly frictionless vibrations as the marble rolled in a path up the sides of the bowl and around. Ben's eyes followed the lazy arcs and parabolas, and when it tinkled to a stop in the center, Ben reached in with his small fingers and picked it up. He examined the color and the finish of the marble, weighed it in his hand, and, satisfied after his appraisal, placed the marble he'd carried around all the previous day onto the rim of the bowl and let it circle to rest at the center. Then he left the workshop with the new marble nestled in his palm.

I'd asked the glassblower about this ritual, and about the day it changed. I had to tease the story out of him, slowly, like the expanding bubble of glass. He told me it started as a simple token, the kind he often gave children in gratitude for not touching any of the fragile wares. The first one was rather large—Ben was still small and there were no assurances that he wouldn't put it in his mouth. (Auntie Cade assures me that he never did, which she found odd, since he put everything else in his mouth at that time—except for a variety of foods she hoped he would like.) Ben carried the fistful of smooth glass cupped in his chubby hand the whole day, and when the glassmaker presented him with a new one the next day, baby Ben deposited the old one and clutched the new. That was what intrigued the glassmaker, he'd assumed Ben would collect them like other children often did. He'd meant for the baby to have both. All of them.

We don't like to use words like exchange or trade ... they're so rooted in blip characterizations of transactional relationships that we just ... find more accurate words. But Ben started this ritual, and each morning, the child plucked the new gift from the bowl, examined it, then returned the one from yesterday before accepting the new one. Until one day, Ben picked up the day's marble, and for whichever reason, preferred to keep hold of the one he had, and let the new one slide back into the bowl.

Perfection is easy compared to this.

The glassmaker was startled, curious, and after the boy left, he picked up the marble and examined it. It was of the same quality as all the other marbles. What inspired the child's preference for the previous? "There were no imperfections," the glassblower told me while clipping a molten blob of glass, it curled in on itself like a living larva. "But there was some quality that displeased him, or at least persuaded Ben to keep holding on to the one in his hand." Here I had to wait some time for the glassblower to roll his rod and use gravity to temper and shape the glob that would become a kind of vase. "That's when it started. It went from a game, to a challenge, to ..." He stared thoughtfully at the fires. "An inspiration. I am so grateful to Ben. His careful regard has inspired the development of my craft to a degree that ... no one else would probably notice, but I know that *he* notices. Propelled by the urge to please him, my craft has been elevated to art and then to an act of devotion. I'm still not sure what the boy is looking for when he makes his assessments. It's not perfection. Perfection is easy compared to this. I just want to make something that makes him happy. Something he wants to carry around with him each day, every day."

I'd asked the glassblower if he'd ever felt offended. Refusing a gift can be a sensitive matter. The glassblower was startled, "It never occurred to me to be offended. You know Ben. The social rules of the gift don't apply. It's just him and me and the day's marble."

I later learned that on the day I'm taking my sweet time in telling you about, the moment that Ben joined the extended family of the living world, Ben had been holding on to the same marble for two ten-days. That marble was blue, with cloudy swirls of white and flecks of green-brown. The glassblower had presented him with 20 examples of his refined craft—some vibrantly colored and particularly large or remarkably small, since the glassblower was getting kind of desperate to create something that would win the boy's

favor—and none of them satisfied Ben’s internal matrices of color, feel, and weight that made a gift a pleasure to hold.

“I still have no idea what it was about that one that appealed to the kid,” he let his sigh shape glass. “It was even slightly misshapen, with a bit of a bulge around the equator. Not at all my best work.”

But this was the one Ben didn’t want to let go of. Come, let’s go catch up with him. You’ll soon realize why I spent a seemingly disproportionate amount of time imbuing so much meaning into a smooth chunk of glass a 3-year-old carried clutched in his grasp. There he is. He’s moved on from the glassblower’s workshop to watch the rivermen unload their shares on the Main Stream docks, with Auntie Cade shadowing alongside him.

The crew rolled barrels onto shore, tilted them upright in a row. Ben watched them pop the tops off the barrels and plunge their hands elbows-deep into the watery contents. They wrestled strands of kelp from inside and strung them, glistening, up on a line, so the sunshine glinted off the slick surfaces, highlighting the variety of each. The exquisite variations in colors and textures and shapes.

Red sea kelp, which eases digestion processes in ruminants, decreases the methane content of cow farts, and can also fry up crisp and salty like bacon. Tasty. Exotic sugar kelp harvested from Nordic shores, alongside eelgrass gleaned from local seagrass meadows. Ben silently regarded the hanging kelp strands glittering like festive garlands, their home-waters draining back into the barrels beneath, while people stopped to admire and inquire.

“Pretty big haul today,” Jibril’s voice boomed out, and he rested his big dad hand on Ben’s back. Ben flinched away from the touch. “Oh, sorry, Benevolence.” Jibril apologized and glanced at Auntie Cade.

She admonished him with a twitch of the corner of her mouth, and nodded encouragement.

Jibril knelt beside his son and lowered his voice. “I thought I’d find you by the boats. You like the boats?”

Ben didn’t answer or meet his eyes. He poked at one of the slimy air bladders bobbing on the surface in the sea barrel.

Jibril joined him in pinching and stroking the glistening seaweed, and started to make conversation with the rivermen.

“These specimens are a delight,” Jibril said. “I don’t think I’ve seen sugar kelp available for some time. Rough seas?”

“No more than usual,” a riverman shrugged as she ladled more seawater on the strung-up strands to keep them glistening and hydrated. “Hydrofoil yacht pirates are always trying to take more than their share, but these beauties came through from the kelp farms of Sør-Trøndelag.”

“They’ve come so far!” Jibril exclaimed, “Ben, this seawater is from the far seas. Incredible.”

Ben continued to poke the air bladders, obviously sharing his dad’s fascination with the seaweed, though maybe not for the same reasons.

Everyone called Winslowe “Ben’s dad” and Jibril “Ben’s big dad” (Ben, of course, didn’t refer to them at all). Jibril was, yes, a hulk of a man, but it was his outgoing personality that gave him his “big dad” stature. He and his mama Kerime kept a community tavern attached to the Archives, where he and Winslowe and Ben had a small living space above the library. “You’re off-loading?” Jibril made note of the number of barrels.

“Most of it. We talked to Lis, who said salvage crew approved a rebuild of the generator serving East Bear cluster, so when needs are met here, we’re taking the river algae to the technicians. They can use their mysterious chemistries to extract materials for self-repairing sail production. You want anything today?”

“No need, no need. Only when I saw you had so much, it inspired me. I have an idea for a new recipe I wouldn’t mind serving up at the tavern today ...”

Ben wandered off to his next stop at the witchcrafters while his big dad invited the rivermen over for a hearty meal, whether or not they had sugar kelp to spare. Auntie Cade followed the boy, sure he was eager to play with the puppies Auntie Owen had been bringing to the circle while they all talked story and swapped dyeing methods and stitch techniques. But Auntie Cade soon realized that she’d lost sight of the boy. He had veered off from his usual route and she searched the crowd at knee height, looking for him, fighting back a strange shame—an auntie never loses sight of their child. (Though Auntie Cade is quite extreme in her sense of responsibilities. She doesn’t permit herself to make mistakes, when everyone else knows that aunties are only human.)

Then she saw him. Tottering over to a man she didn’t recognize. Not a neighbor, perhaps a neither. That’s what we call people who we don’t yet have a named relationship with. You call them strangers, which ... rude. But the man was sitting crouched off to the side with his head down and his cupped hands held out. Ben had noticed him, probably glimpsed between the legs of passersby, and had left his prescribed route to answer him.

Ben slipped his tiny hand into the man’s empty cupped ones.

The man looked up, startled, and opened his hands to find that Ben had placed the glassmaker’s marble there. The colorful work of magic. The cold miniature world.

Tears streamed down Auntie Cade’s cheeks when she saw Ben take the man’s hand, urge him to his feet, and lead him over to the puppies. She knew how Ben felt about holding hands, that he endured his own discomfort to give comfort to another. She hurried the few steps back to Jibril and tearfully recounted what had just happened. How Ben

had recognized the man's need, and he had responded. This was unmistakably a word. Ben's first.

They embraced and laughed and wove through the crowds to the witchcrafters' circle. They found Ben silently introducing the man to the squirmy puppies, even then showing his abilities to be attuned to the nonverbal needs of creatures, human and otherwise.

I'm sure you know that's not the end. How could a first word ever be?

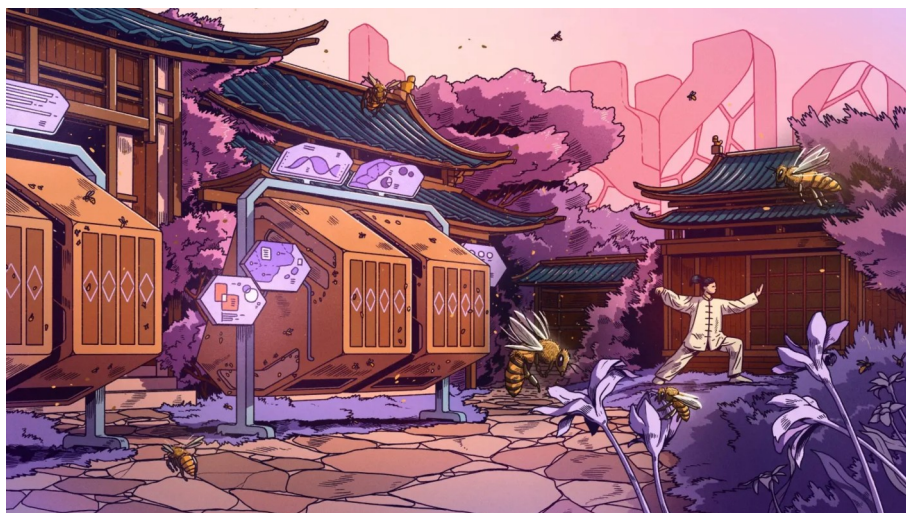
But you didn't need a story about an ending. I saw that right away, the first time we met there in the beginning. Saw how I would have to unspool my narrative thread into loose loops and coils to ensnare you. My needle sharp and glinting to repair the tears. It's a story, I hope, that will hold to bridge the short century between us. A tightrope that will help you find your way back here.

Even now, you're wondering how a storyteller from the future could be telling you all this. The, like ... *mechanics* of the thing. See, storytellers are time travelers. Always have been. Or at least they could be, if they understood their true relationship with time. I'm not sure the blip storytellers were able to do this. The records of their stories would read differently if they could ... though maybe the ones who understood the weavings of time didn't get the opportunity to leave records. (I'll have to talk with Winslowe about that one—archivists aren't wrong all the time.)

I'm not predicting the future. I'm just telling you what I've seen and been told. So the next time you find yourself holding on to an imperfect blue marble, you might have a few ideas about what to do with it.



*Rae Mariz (she/her) is a Portuguese-Hawaiian speculative fiction storyteller, artist, translator, and cultural critic with roots in the Big Island, Bay Area, and Pacific Northwest. She's the author of the Utopia Award-nominated climate fantasy *Weird Fishes* and cofounder of *Toxoplasma Press*. Her short fiction has appeared in *khōrēō* magazine and made the shortlist for 2023 IAFA *Imagining Indigenous Futurisms Award*. She lives in Stockholm, Sweden, with her long-term collaborator and their best collaboration yet.*



Chapter Two

To Labor for the Hive

*A beekeeper finds a new sense of purpose and community
after helping to develop a warning system for floods.*

Author: Jamie Liu

Illustrator: Stefan Grosse Halbuer

Ropy

blink Huaxin always took pride in telling people she met her partner while doing tai chi in the park. Every other young person nowadays found their relationships through AI matchmaking services or VR mixers. But Huaxin was old-fashioned.

She'd joined the crew of elders practicing, their moves fluid as the stream that ran by the village. She'd spotted him

then, the only other face as young as hers: a thin man with glasses, thick curls of hair, and a gentle smile. Naturally, they'd felt drawn to each other, and Huaxin struck up a conversation.

After that, they met up for tea following each tai chi session. He was a lot like Huaxin: opinionated, particular, averse to vulnerability. He was also impulsive. He picked up new topics easily, researched them with relish, constantly talked to her about how the world was changing.

One day he led her back to the park and removed a ring from his pocket. It was no diamond, but Huaxin still gasped when she saw it: a smooth stone, well-worn like a comforting friend. "The world may be changing," he said with a cheeky grin, "but I want you to be my constant."

He moved in with her and she introduced him to her livelihood: beehousing. They shared bowls of noodles, talked about having children, and continued to practice tai chi, nurturing their slowly aging bodies. And then, nine years later, he left her.

"And why do you need this information again?" Huaxin snapped into the phone.

"Science," the person on the other end said. This was the third time Huaxin had asked, and now it seemed like the man was going for the simplest explanation possible. "It'll provide useful data to prevent natural disasters. We know your region is highly flood prone. This will help you prepare for that."

Huaxin chewed her lip. Did they know how her parents had died? If so, of course they'd come running to her. "And you're saying the bees will provide this data?"

"Yes. Just click on the link I sent you. Again, I'd like to offer our services to install digital monitoring systems in the hives. It'll be completely free and will make it easier —"

"No thanks," Huaxin said, hanging up. On her computer, she clicked on the unread message. They wanted

her to download an app. Didn't she have enough shit clogging up her phone? Wasn't there an option to just send an email with whatever observations they wanted her to make? She clicked the "Support" button and typed: *i don't want your fucking app*

Huaxin's phone buzzed. She'd received a text.

Support: hey there, can you explain your dilemma to me?

Huaxin eyed the screen in suspicion. Was this an automated response? Or worse, AI? She didn't want to talk to a robot.

Huaxin: are you a human?

Support: yes, i am.

Huaxin: who are you?

Support: i'm a scientist with sichuan resilient. i help implement the nature-based early warning system we've partnered with the beijing office of meteorology on. is that what you're asking about today?

Huaxin: i guess

Support: may i ask why you don't want to download our app?

Huaxin: too many apps on my phone

Support: i understand. do you prefer another method of reporting data?

Huaxin: can i just email it to someone

Support: you can email it to me. The scientist sent Huaxin an email address, and Huaxin breathed a sigh of relief.

Huaxin: thanks. what's your name

Support: my name is anshui. you are huaxin lin, correct?

Huaxin: mhm. so the guy on the phone said i'll get paid for this?

Support: yes. think of it like a part-time job. we know it takes time out of your day to record these observations and

send them to us, so we want to make sure you're compensated.

Huaxin: i still don't know how bees will help prevent flooding

Support: several studies show that some species of animals, including bees, exhibit specific behaviors prior to an extreme weather event. this program is two-fold: by telling us how the bees are behaving, we can predict if something like a flood is going to happen, and we can distribute emergency messaging to your region. on the research side, if we collect enough data that connects certain bee behavior to weather events, we'll have more ways of predicting disasters in the future.

Huaxin: you're telling me you can't predict floods already with your fancy science tools?

Support: with the unpredictable ways climate events are unfolding, meteorological stations can only do so much. we're testing supplemental methods by using nature-based solutions. nature is very wise; we just have to listen.

Huaxin: sounds like some hippie bullshit to me

Support: we're included in that nature. doesn't your body sometimes tell you when it's going to rain?

That was true. If Huaxin didn't smell it in the air, she literally felt it in her bones. She'd brought it up to a doctor once, who told her that sometimes people with joint issues could feel pressure changes in their knees. She didn't like the idea of having weak joints. She was 37, hardly ancient.

Huaxin: i guess

Support: if you have any other questions, please let me know. have a nice day :)

This person seemed like they had the role of a customer service representative plus IT person. Basically, the worst job ever. She put her phone away and went outside.

It was spring. From her home in the hills, Huaxin could see cracks of color speckling into view as new buds

bloomed across the valley. The bees stirred from their slumber, buzzing more than they had in the previous months.

Over the years, Huaxin had departed from her family's traditional beekeeping and veered into beehousing, an emerging practice that was more about providing for bees' needs than managing bees. She still had one Chinese honey bee hive, but she'd also dotted her garden with bee motels, plant matter, and soil mounds to serve as wild bee habitats. Similarly, she'd filled her garden with a diverse mix of native plants: sweetly fragrant lychee and peach trees, traditional Chinese medicine staples like black cardamom and butterfly bush, native pea shrub and milkvetch, and vegetables like sponge gourd and radish.

Other than harvesting honey, Huaxin didn't "keep" any of the bees. Certainly not the wild ones. She provided them shelter and food and they pollinated her plants. The bees were gentle with her. She liked this relationship; it was easy to understand. Give respect and receive respect in return. It wasn't the same with humans.

After collecting data, she sipped homemade jasmine tea with a dollop of honey and took out her phone.

Huaxin: 6am, roughly 50 bees per hive en route to flowers, determined dance, will report on return times in afternoon

Support: thank you. you can send me one report at the end of the day if you prefer, rather than multiple throughout.

Huaxin: i won't remember all the details if i do that. would you rather me not text you every hour

Support: no, this is fine. determined dance, i like that.

Huaxin: thinking of their routes as dances helps me characterize them. sometimes it's a lion dance, sometimes it's tai chi. anyways you're right, i don't want to bother you with notifications

Support: i don't mind. i like the frequent texts, i don't get a lot of messages.

That was ... sad. Or maybe not? Maybe it meant Anshui had a rich social life completely offline. That sounded amazing.

Huaxin: aren't you texting other bee people

Support: they're not all beekeepers. and most of them use the app, which automates the data delivery.

Huaxin: ah so i'm just a high-maintenance bitch

Support: you like doing things your way. which i admire.

Something tingled in Huaxin's stomach. She bit her lip.

Huaxin: are you flirting with me

Support: ... no. apologies if it came across that way. i can stop if you want. texting you things unrelated to the data monitoring, i mean.

Huaxin didn't know what to say, so she stashed her phone.

The rest of the day was like any other, with the addition of her data duties. She tended to her garden. She visited the porch when people rang to buy her products. She made lunch: yellow squash from her garden, stir-fried with fermented black beans and tofu from the weekly market. She texted updates to Anshui, who didn't respond until the end of the day with a "thank you."

Someone knocked on the door. The sun had set by now, so Huaxin already knew who it was. "Hi, Ms. Chen. The usual?"

Ms. Chen gave a curt nod. "And two lychee honey sticks, please. Need something to drown out the medicine tonight."

She'd been forgotten. Abandoned. She wanted to know her abandonment was worth it.

Huaxin nodded, fetching the jars and sticks. Ms. Chen was her elderly neighbor—well, if one counted a neighbor as someone who lived two hills away. She'd lived a nocturnal life ever since she lost her job decades ago when countrywide protests caused the country to shut down its last coal mines.

Their little town had celebrated. Ms. Chen had not. With no family, she'd taken pride in her work and found her purpose lost after that work disappeared. She'd lived in isolation ever since, except to visit town every once in a while to grab groceries, or buy honey from Huaxin.

Huaxin felt a kinship with her.

"Hot today," Ms. Chen said as she took the honey. Their few exchanges of conversation had to do with the weather. As it was with people who never talked to others.

"Yeah."

"I hope it was worth it."

"Sorry?"

Ms. Chen gazed into the distance. "Shutting down the mines. I hope it helped. The heat would be worse, right?"

Oh. She was talking about climate change. Huaxin always avoided the topic with Ms. Chen. It was the global effort to decarbonize that had lost her her job, after all. And yes, shutting down the coal mines was a good thing. But the government had not made sure she'd had another livelihood to jump to after the transition.

Still, it wasn't bitterness in Ms. Chen's voice. Instead there was ... guilt? Regret?

No. Ms. Chen's eyes were watery. She'd been forgotten. Abandoned. She wanted to know her abandonment was worth it. It wasn't the income she would have missed the most; the country's social programs meant no one needed to work to survive. But Huaxin knew that for Ms. Chen, her job had also provided her a sense of routine, of camaraderie. Ms. Chen mourned the loss of that.

"Yes," Huaxin said. "It would be worse."

The next morning, Huaxin woke up feeling empty. She texted Anshui.

Huaxin: hi. you can talk to me.i don't want this to be weird

Support: ok, thank you. sorry again. don't apologize

Huaxin: how did you sleep

Support: not bad. it was warm but i have good AC. you?

Huaxin: no good AC but i'm used to the heat. gonna get started on the bees now, will report in a bit

She went through the motions faster today and poured herself another cup of tea before going back to her phone.

Huaxin: 6:15am bee workday start. lazy bastards. 40 bees per hive, more like tai chi

Support: the bees deserve to rest too.

Huaxin: i'm joking, i like bees more than humans

Support: what's wrong with humans?

Huaxin: we made the mess that's making you have to do this whole early warning thing, right? selfishly polluting and not caring about nature.

Support: we also realized our mistakes and put ourselves on the path to healing the planet. isn't that a good redemption arc?

Huaxin recoiled. Some people didn't deserve a redemption arc. But she couldn't say that. Not good to come off as a bitter divorcee.

Huaxin: i guess

Support: such as you. i read your hive setup and it's interesting. one honey bee hive, 3-4 wild bee hives.

Huaxin: having too many honey bees can actually hurt wild bees. they outcompete them for the same resources

Support: that's mostly the case with european bees, isn't it? asian honey bees are threatened, even here in china

Huaxin: yeah and the invasion of european bees are the reason for that lmao. but wild bees have it worse. people don't care about them because they don't make a marketable product like honey. wild bees are better at pollinating native plants, but that's a service that goes unnoticed. ok you're right, i'm biased toward wild bees, what can i say

Support: you like supporting the underdog, that's a good thing.

Huaxin realized that no one had let her ramble on about bees like that in a long time. Her heart was beating fast from the flurry of typing. Or perhaps there was another reason.

Huaxin: eh, i'm not the only one beehousing. more people are seeing the benefit of it

Support: so there are others. humans aren't so bad after all.

Huaxin: so eager to stifle my inner misanthrope. but true. at least humans aren't robots. that AI shit is what's really going to destroy the world. anyways thanks for listening to me monologue

Support: anytime. i like hearing your thoughts. make sure those bees stay hydrated.

Huaxin hated to admit it, but she was getting horrifically, deliciously addicted to texting Anshui.

Her routine had changed. After her morning data collection, she'd sit outside for a few hours, sipping her tea and texting. She learned more about Anshui's role as a scientist — not that she understood all the technical aspects of it—and she answered Anshui's many questions about bees.

Once, they shared a meal together. At least, they did it the best they could digitally; Huaxin wanted to have a video chat, but Anshui refused. Instead, Huaxin sent Anshui a recipe and they made it individually before eating together. Anshui, who in their words was “vaguely Buddhist,” taught Huaxin how they gave thanks for their food: consider the land it grew on, the hands that touched it, the human and nonhuman creatures who helped nurture it to harvest. Think of it as providing sustenance and strength for your body. Now use your newly given energy and put that care back into the world.

Huaxin: that's hippie as shit. but i like it

Support: i thought you might. this recipe is really good by the way. you should share it with the center, i'm sure

they're always looking for new vegetarian meals with locally grown produce.

Huaxin: the what?

Support: you haven't been to the community resilience center in your town?

Fifteen minutes later, Huaxin heard a knock on her door. She opened it, and then stared at the young woman who stood on her patio, grinning under a thin layer of sweat. "Hi!" the woman said. "Huaxin? I hear you're overdue for a tour of the center."

"How," Huaxin said, numb.

The woman laughed. "Anshui called me and said you hadn't heard of us. And then they said you're a beehouser, and I was like *ohhh*, I totally know where she lives, I buy honey from her! I can't believe you've never made it down to the center. My bad for not advertising it better."

Huaxin plastered on a fake smile as the woman talked, all the while discreetly texting.

Huaxin: what the fuck

Support: go with her.

"It's only 10 minutes away," the woman said, pointing over her shoulder. Behind her stood a solarbike with a passenger cart attached to the back. "I can give you a ride."

And not have a way to leave early if she didn't like it? "I'll follow you," Huaxin said, grabbing her keys.

Now use your newly given energy and put that care back into the world.

They biked down the hill, veering toward a large, elevated building near the edge of the town center. As they parked, Huaxin examined the building in surprise. She'd passed this hundreds of times, but always assumed it was some government office. It looked very boring, nondescript save for the giant gong beside it.

"It's bland, but we have plans to spice it up," the woman, who introduced herself as Min, said. "We've only been running the center for two years. This used to be a utility

office, but after they shut down the coal mines, it stood empty.”

“Oh, right. That explains the gong,” Huaxin said in realization. Back when the mines still ran, the gong rang every morning to signal the start to the workday.

Min nodded. “Yes! Now we use the gong to supplement the early warning messaging, for people who don’t have phones. The town agreed to give this whole place to us after communities around here petitioned to repurpose it.”

Huaxin hadn’t heard of any such petition. Had she isolated herself that much?

Inside, the center felt much cozier. It had a huge open space with tons of tables and couches, kitchens, bathrooms with showers, libraries, private rooms for sleeping or other activities, power stations, a clinic, recreational activities like ping pong, playsets for children, and both an indoor and outdoor garden. It felt like a home but meant for hundreds of people.

“Who lives here?” Huaxin asked, examining the photos pinned to a corkboard.

“Anyone who wants to,” Min said. “People who need a temporary place to stay. People who need help. Visitors. Those displaced by—well, anything. We built it initially as a gathering space if another natural disaster happens. Like a flood. That’s why the whole thing’s elevated. Or a heat wave, since we know AC penetration here is low.”

“You don’t have to live here to visit, either,” another voice said, and Huaxin looked up to see a young woman in a wheelchair rolling toward them. Min made a noise of delight and ran over. “The center is a general gathering space. We have all sorts of events here. Open mics, dinners. You can come if you’re just bored.”

“This is Huaxin. She’s never been to the center before, so I was showing her around,” Min said to the woman. She

gave her shoulder a squeeze. “Huaxin, this is Kunyi, my fellow cofounder. And my wife.”

The affection with which she uttered “my wife” bit the tender meat of Huaxin’s heart; she tried not to show it. “This is a great place,” she said. She meant every word of it. She was trying to tamp down her jealousy. Couldn’t this have existed eight years ago, after she’d been discarded?

“Please spread the word,” Kunyi said. She touched Min’s hand, and Huaxin had to look away. “It looks like we haven’t reached everyone, despite our best attempts. We’d love for everyone to feel connected.”

Huaxin’s thoughts went to Ms. Chen. She wondered if she could get that hurting old lady to come here.

She zipped home on her bike. She still had data to record.

Support: have any pictures of the center to share?

Huaxin: i thought you would have seen it already

Support: i haven’t been in a while, i bet it’s changed.

Huaxin: how do you know what’s going on in my own town and i don’t

Support: min is my friend from secondary school. i used to live nearby, you know. i’m glad you got to visit, it’s a special place. somewhere that makes you feel less lonely.

Right. Huaxin felt something bitter in her throat and grabbed a honey stick to swallow it down.

Bees never stopped working. Huaxin liked that about them. They knew the value of discipline and all played a role in their community. One day, as the haze of summer approached, Anshui asked her why she never took a vacation.

Huaxin: who will take care of the bees

Support: i know a few beehousers near you who would be happy to send staff your way. there are also ecology students here who would love an opportunity to shadow your farm.

Huaxin: i don’t trust them. no offense

Support: that's fair. i suppose the bees are like your family. you could also try digital beehousing? that way you can watch them remotely.

The question made Huaxin flinch. She forced down the coldness rising up in her, but her fingers trembled as she typed.

Huaxin: eh. i don't trust tech

Support: i've noticed.

Huaxin remember that flood? my parents were trying to evacuate and they used one of those dumbass navigation tools. drove right into a flooded road and drowned. wouldn't have happened if the tool actually knew our roads. but no, its fancy algorithms got people killed

Support: i'm very sorry to hear that, huaxin.

Huaxin: whatever, i'm over it

Support: i don't fault you for not trusting tech. we should create a world where tech works with people. if it just tries to replace them, things go very wrong.

Huaxin: tell my ex-husband that

She paused. She didn't know why she brought that up. She hated talking about him. It was a shame that always hung in the back of her mind, made her wonder if she was unlovable. Replaceable. Worse than that — trash. Hell. She couldn't hide it forever.

Support: what were his opinions on tech?

Huaxin: we fought a lot about it. he wanted to, among other things, digitize my beehousing. he said tech would save the world and anyone who didn't adopt every new innovation was going to fall behind and be forgotten. and then he proved that prophecy true by leaving me for someone better hahahahaha

Support: i'm sorry, that's shitty of him. you didn't deserve that.

Huaxin felt her cheeks grow warm. She felt drunk on something. Anshui's attention, maybe. Unearthed rage from

the hurt she'd tried to bury for so long. And at the same time, something else. A seed of a feeling that nagged at her.

Huaxin: why are you being so nice to me

Support: i don't think i am? no one deserves to be treated that way. if he wanted a better future, that should have included a world where no one gets abandoned

Huaxin: holy shit. you're not real

Everything slammed into place. Anshui always being so friendly, so available. Anshui never sharing personal details. Anshui refusing to video call.

Anshui was not human.

Support: what?

Huaxin: you're a fucking AI. GodDAMMIT. you LIED to me. i'm so stupid

Support: ... are you serious? i am definitely NOT AI.

Huaxin: i don't know anything about you. you never want to call

Support: i'm sorry for trying to maintain my privacy. i thought YOU would understand given how untrusting you are of the internet.

Huaxin: yeah but we've been texting for weeks now??? send me proof that you're real

Support: i do not owe you anything. if you think the only reason someone would show kindness to you is because they're a computer program, then i'm sorry that's your worldview. but honestly i'm disappointed that after all this time you don't even see me as human.

Huaxin forced herself to put her phone down and take several deep breaths. She didn't know what the truth was anymore. All she knew was that she'd broken something that had felt so rare and precious, and she wasn't sure she could get it back.

Summer arrived in a wave of bright orange feeling, but Huaxin still felt stifled in the gloom of winter. By habit, she still took bee behavior notes in a long-ass document

interspersed with apologies, observations, and recipes for Anshui. Obviously, she never sent it. The last texts between the two were still Anshui's searing words that made Huaxin's throat close up every time she read them.

She began to notice more the changes around her: the bees slowing down, Ms. Chen's visits becoming less frequent as she blamed the heat, more people staying at the center, which Huaxin visited often now. People murmured that this was the longest heat wave in a while, and Min and Kunyi's team were busy making sure the center was prepared to take care of everyone.

One morning Huaxin trudged into the garden. The eerie silence almost knocked her over. She ran to the hives and checked each one.

Huaxin: anshui help

Huaxin: the bees aren't moving

Support: are they okay? what do they need?

She couldn't control her swell of emotions at seeing the first words from Anshui in a long while, but she didn't have time for that now.

Huaxin: i think they'll be fine if i get a continuous stream of water going. but they've collected a ton of water for their hives. they stopped fanning the entrances and now they're clumping outside. they know a huge temperature spike is coming

Support: take care of them. i'll tell min. have you been continuing to take notes?

Huaxin: yes, i'll send them to you

She navigated to the document where she'd been keeping all the notes, apologies, and recipes, and without making a single edit, sent it over. Then she ran to the hose.

Huaxin had never seen the whole town like this: buzzing with determination, working tirelessly as bees. By the time she arrived at the center, Min was already waiting

out front. “How are the bees?” she asked, handing Huaxin a cold water canister.

“They’ll be fine.” Huaxin was worried, especially for the wild bees; they were more sensitive to heat. She’d set up more shade and hydration stations and just had to trust they could take care of themselves. “How is everyone doing?”

Min grimaced. “Chaotic, but we’ve trained for this. Everyone’s been prepping on what to do if we get a warning, so they all knew to come here. Some volunteers also went to fetch anyone who might have passed out in their homes. The hospital in town and our clinic here is stuffed, but we’re making do.”

Huaxin glanced over at the bike parking, which was fuller than she’d ever seen it. Something occurred to her, and she looked back at the hills. “Has an elderly woman named Ms. Chen showed up?”

Min’s face furrowed in immediate concern. “I don’t think so.”

She began to run toward the bikes and Huaxin grabbed her arm. “No. You stay. I know where she lives.”

“But —”

“Min,” Huaxin said sternly. “Listen to your elders.”

Then she ran toward the gong and struck it with three reverberating strikes: the signal for the start of the work day.

That day, the temperature spiked to 45 degrees C for a sustained five hours. The next day was even worse, with both the mercury and humidity climbing to record highs.

Huaxin had reached Ms. Chen in time. The old woman had been sleeping, but her body had reacted to the familiar sound of the gong, and she was awake by the time Huaxin reached her house. The two had zipped back to the center. Meanwhile, Anshui had been texting updates.

Support: temp should begin to dip tomorrow evening. thanks to you and other monitors in your area, we were able to contact everyone and avoid a lot of deaths.

Huaxin: thank god

Support: i appreciate the notes you sent over. i retroactively input all the data and the temp-dance curves provide a lot of new information. this will be really helpful for our research.

Huaxin: temp-dance curves huh?

Support: your metaphors were too useful not to use.

Huaxin: i hope you uhhh ignored all the other stuff in my notes that wasn't bee data

Support: how could i? i've already tried the recipe for longan honey iced tea, it was delicious.

Huaxin: ughhhh

Support: but really, thank you for the apologies.

“Who’re you texting?” Kunyi asked as she and another person wheeled by, pushing a cart of wet towels. “You’re blushing like crazy.”

“Shut up,” Huaxin snapped, which only made Kunyi chuckle more. Huaxin retreated to one of the center’s indoor balconies before daring to turn to her phone again.

Huaxin: i know this is a sensitive point but you really don't have to be nice to me. i was an asshole

Support: i could have been more open myself. i'm always bad at that. but like i told you, people deserve redemption. i'm not going to leave you for making a mistake. love is labor and labor is love.

From this high up, Huaxin could watch the action of the center below: people handing out food, refilling water bottles, playing with each other’s pets.

Everyone, a role. Everyone, now, including her. She finally broke down and cried.

In autumn, for the first time in years, Huaxin walked to the park to practice tai chi. She’d been spending a lot of time at the center, teaching others the basics of beehousing. She went there every day now. It had even become more beautiful, thanks to Kunyi hiring Ms. Chen to come up with a

mural design that both covered the drab walls and created an albedo effect.

But today, Huaxin needed a break from the place. Sometimes it just had too many people.

She found a shady spot to dance. Every now and then she checked her phone to see how the bees were doing — because she had to admit, being at the center so often meant that *some* digitization was useful. Just a little.

She remembered to take time to close her eyes and listen. To the stream, the trees, the way the wind caressed the lines of the mountains around her. *Nature is wise.*

It wasn't long before she heard a set of footsteps approach, and then a voice said, "You dance just like the bees."

Huaxin looked up at the unfamiliar face before her and smiled.

This story was the First Place Winner in 2024

Jamie Liu (she/they) is a writer, climate resilience planner, and climate activism volunteer. She was born and raised in the San Gabriel Valley, California, and currently lives in New York City. This is their first published story.

Stefan Grosse Halbuer is a digital artist from Münster, Germany. In over 10 years of freelancing, he worked for brands like Adidas, Need for Speed, Samsung, Star Wars, Sony, and Universal Music, as well as for magazines, NGOs, and startups. Stefan's art is known for a love for details, storytelling, and vibrant colors, and has been exhibited and published all around the globe. Recently, he released his first solo book, Lines, a coloring book with a selection of his art from the last years.



Chapter Three

The Last Almond

*As California prepares to destroy a levee and sacrifice
its last remaining almond farm, its caretaker remembers
the toll floodwaters have taken on his family.*

Author: Zoe Young

Illustrator: Mikyung Lee

I knew what the paper said before I read it. They pin the evictions to the house, but the agriculture notices go on the barn.

The kid saw it first. I've been paying him to mind the irrigation lines in the orchard now that my legs are talking back. He burst through the door like a bullet train.

"There's paper," he said, "real paper on the barn door." I'd been expecting it for years—decades—but when it finally happened it somehow didn't make sense. I was at the kitchen

table, and I just stared down into my empty mug at the little salmon painted on the bottom.

“How much paper?” I asked. The kid didn’t know how to answer. I tapped the cup on the table and a spray of black coffee grounds turned the salmon into a catfish covered in mud. “How many sheets of paper?”

“There’s one white rectangle on the barn door and it’s made out of paper.”

Shit.

The kid was practically skipping as he led me to the barn. I’ve got a couple dozen bonus trees between it and the house and they’re all in bloom, branches thick with white almond flowers like snow. Why does everything turn beautiful right before it goes to hell?

The kid couldn’t stop chattering.

“I thought it was illegal. Do you think they had to kill a tree for that paper? Why didn’t they send a comm?”

“Lot of farmers went dark when the evictions started,” I said. “State can’t serve you a notice if you don’t have a screen. So they resurrected something called a printer to put the bad news on paper.”

“Are you getting evicted?”

“If you’d read the goddamn thing, you’d know already.” That shut the kid up.

Sure enough, there it was on the barn door. I ripped the page off the pin and the kid gasped.

* * *

Eminent Domain

Agricultural Modification Notice

February 20, 2090

Robert Wallace,

We write to inform you that within the next 24 hours the State of California will breach the levee on your property that stands between your orchard and the Sacramento River. We will create four breaches in the levee wall at 50-meter intervals. Removed stones and earth will be placed in a

convenient location for your reuse. Any attempt to block this levee breach or return it to its former state will result in the seizure of this property under Eminent Domain Statute 2815.

Thank you for your cooperation.

Cynthia Garcia

Cynthia

Garcia

California Secretary of Agriculture

* * *

I crumpled the paper in my hands.

“What are you doing?” The kid yelled.

I let the ball fall to the ground and get lost in the carpet of white almond flowers.

It was hard to decide which was more insulting. The letter itself or the fact that the assholes didn’t even say why—had to look it up on the goddamn weather service. An atmospheric river was coming from the Philippines. It would overflow the Sacramento River and the state wanted every floodplain along the river open to receive the water—that apparently included California’s last almond orchard.

“Diego Rivera painted these trees,” I said.

“Who’s Diego Rivera?” The kid and I were back in the house, both staring at our screens.

“It doesn’t matter.”

“Will the orchard make it?” the kid asked.

I read down my screen: *Fifty-eight centimeters of rain in 48 hours. Dams will be opened when water levels exceed winter capacities.* And then in bright red letters, *ALL FARMS SOUTH OF SACRAMENTO REQUIRED TO FLOOD.*

“Depends on how much water we get,” I said. “Hell, next time you see paper it could be from one of our trees.”

The kid looked out the window. “I hope I never see paper again.” Bless him. Then he started bargaining. “Maybe it’ll be good. Almonds are a thirsty crop and we’re coming out of a drought. Maybe this is what they need. Maybe you

can shut off the drip lines for a whole year and just let the trees drink.”

“You shut off the drip lines, didn’t you?” I asked. The kid nodded.

I put down my screen and looked him square in the face. “State’s been on my ass since I took over this farm. Those trees shouldn’t even be here. We should be farming rice, or blueberries, something that can flood. But our trees take too much water and when the big rains come, that levee blocks the river from overflowing its banks and seeping back into the ground.”

“But there are a million other farms that can flood.”

I turned my screen around and showed him. “This says we’re getting a two-day downpour, and that’s probably the last rain we’ll see until next year. If the state doesn’t save that water in the ground, nobody gets to grow.”

“You’re talking like one of them.”

“Why not? I understand it, doesn’t mean I have to like it.”

“But the orchard is a piece of history.” It was what I told him to say to tourists. But now, he said it like he believed every word. “It’s not fair.”

I tried to smile at him, the little idiot. Had I ever been that young?

The bulldozer came in the afternoon. I sent the kid home and set up on my porch with a bad bottle of whisky. Might as well watch the show.

The wind was quiet in the orchard, but I could see clouds amassing in the east. The birds were squawking each other deaf. The land knew something was coming.

BANG!

It came from the levee. They must have taken the access road on the other side. Goddamn fusion engine, I hadn’t heard a damn thing. *Bang, bang, bang!* A shovel

punched through the wall like a fist. A long metal arm appeared behind it and the deed was done.

When the thing finally rolled through the hole, there was no person driving it — no cab, no steering wheel—it was just a giant shovel on tank tracks. Then I watched it clear a perfect 5-meter hole in the wall and stack all the rocks and dirt next to it with a forklift it produced out of its ass. The situation was pretty funny when you thought about it—the orchard I’d tended for 30 years taken down by a soulless machine with a pointy ass.

It drove up the levee wall another 50 meters, this time on the orchard side because it knew I knew the jig was up. Then it punched its hole and cleared its rocks, and then it did it again, and again. By the time it rolled out my front gate, there were four perfect holes in my levee and I was drunker than a fence lizard.

Soon, the rain started and I sat there staring at the hole. I couldn’t take my eyes off it. A feeling—a fear I’d shunted down for decades rippled through me. What was going to come through that wall?

When the sun went down, I didn’t bother with sandbags or pumps, I just got in bed. The house was elevated four feet, maybe it would be enough. On the edge of sleep, I pictured the water pouring through the windows, cold and brown, lifting the bed off its frame with me on it.

It was a fantasy. It was a memory.

Sacramento, California, 2058

The sentence always starts the same way, but he doesn’t know how to finish it.

The Folsom Dam broke and I don’t know where my kids are.

The Folsom Dam broke and I can’t reach my wife.

The Folsom Dam broke and my entire life will be underwater.

The house erupted in sound when the alert came through. Every speaker he talked to throughout the day was suddenly

yelling at him. *Get to high ground!* Sacramento would be inundated in 9 minutes and 38, now 37 seconds. It was not an evacuation order, it was an order to shelter in place.

There is a banging on his door. He opens it and a family of four charges in. They live across the street.

“We need to get upstairs!” one of the moms yells. His is the only two-story house on the block.

“Follow me,” he says.

They run up the stairs and he pulls down the ladder to the attic. The other mom takes his arm.

“We’ll cross that bridge if we need to,” she says.

They all end up in the bedroom, and the two kids huddle together in the middle of the big bed the way his own kids do when they’ve had a nightmare. These two are a little older—second or third grade—he can’t remember their names.

On the edge of sleep, I pictured the water pouring through the windows, cold and brown, lifting the bed off its frame with me on it.

His kids are at a one-story daycare 2 kilometers away. Terror shoots through him. He can’t get there, he can’t get to them in time. Does the daycare have an evacuation plan? They must; he and Ayla paid enough for it.

Ayla can get them, the hospital is just blocks away. But where would they go? The thought of Ayla—of something happening to Ayla—momentarily paralyzes him.

He forces himself onto the balcony and holds his phone up to the sky in the rain trying to get a signal. There is nothing. The whole city is clogging up the servers doing exactly the same thing, and yet the clock that appeared on the screen with the municipal alert keeps counting down. 6 minutes, 42 seconds.

One of the moms is out there too, phone in the air. Her name is Kalani. He looks at her expectantly. She shakes her head.

“At least you’re all together,” he says, more jealous than he has ever been.

“Ayla’s amazing. She’ll be fine, she won’t let anything happen to your kids.” Her words are toothless, but in this moment they are all he has.

“Who are you trying to reach?” he asks.

“My dad—or my dad’s caregiver. He hasn’t been particularly mobile for a while.”

He nods and thinks of his own parents aging safely in Michigan. Kalani hits her phone against her thigh and looks at it. Nothing.

“Dammit!” she tries again. Nothing. “How did this happen?” She means the dam break, the flooding, everything. He shakes his head. “Just two wet years.” It’s true. Last year there had been 19 atmospheric rivers between January and March, and the whole state celebrated when the drought was declared over. When it happened again, there was nowhere for the water to go.

He looks back at his phone—4 minutes. Then the sound begins.

At first, he can hardly make it out through the rain, a low rumble that seems to come from everywhere. He and Kalani look to the hill at the east edge of the neighborhood. They know this is where the water will come from. They see nothing.

“Can they swim?” He asks, indicating her kids.

“They’re Hawaiian, of course they can swim,” she says. He nods. Can his kids swim? The oldest can, can’t he? The sound is steadily increasing, and something changes on the hill. Light crests over it, a little at first, then more and more like a second sunrise. The rumbling rises. This is it. The water is early.

Kalani runs back to her family, huddled on the bed. He stays on the balcony, and stares at the otherworldly light—could the flood be reflecting it?—he needs to stop it. He

needs to will the water to wait. Ayla will need the next 3 minutes. He grips the railing. He is soaking wet.

“Stop!” he screams as though the flood can hear him. “Stop!”

It doesn’t. Angry water crashes over the hill, then buries it—a wall of brown and white carrying cars and sheds—pieces of a city that is quickly ceasing to exist.

“No!” he screams. But he can’t hear himself over the roar. He looks back into the bedroom. The family already knows. The kids are holding onto their mothers and the women are holding each other.

He looks back out and the first few houses in the subdivision have been reduced to their roofs. The water is ping-ponging through the neighborhood, downing lampposts and trees and smashing front porches into walls. It’s almost at his door.

“Hold on!” he yells back into the house. Then he hears the flood blow out his downstairs windows. The balcony shakes. He runs into the bedroom and holds onto a wall. He can feel the water tearing his house apart through the floor. A lamp crashes to the ground next to the big bed. A bookshelf drops its contents and falls over. He sees that nothing has fallen on the family, but Kalani is staring at him. They lock eyes. Her nose is in her child’s hair, her arm is around her wife, but her eyes are fixed on him.

They stare at each other for what feels like hours. They are thinking the same thing—as long as they can hold each other’s gaze, the house will stand, the sickening bumps coming through the floor will not hit a load-bearing beam. As long as they keep staring, they will live.

Slowly, the crash of water softens below them. The bumps stop coming through the floor, and at last, all that is left is the sound of rain on the roof. Only then do the kids begin to cry.

“Just shut up and take the canoe,” Kalani says. They are in what’s left of her garage.

It took the two of them about a half hour to wade through his house and across the street. His ground floor was unrecognizable. The couch had been ripped in half, and framed photos, kitchen utensils, and other bits of his and Ayla’s life bobbed around them like dead bodies.

The water was up to their waists as he and Kalani crossed the street. It looked placid on top but they could feel it had a current and they took slow, measured steps toward the gaping mouth of her garage. The door had blown off but the Hawaiian outrigger canoe was still hung up on the ceiling.

Now, he stands under it, staring at the carvings in the wood: a bird with a long beak, a man with arms outstretched, and waves—waves everywhere.

“It’s a family heirloom,” he says. “It’s a piece of history.”

“It’s a boat,” she says, “and it works.” She is loosening the ropes to lower the canoe down. “Help me out.”

He undoes the knots with her and soon the canoe splashes down into the water. It looks like it can hold four, maybe five people—his family. Another carved wooden float connects to the main canoe with long poles so it won’t tip easily and there is a rope and six oars inside.

Kalani stares him down. “This is a loan. I expect you to bring this back to me in one piece with your people inside.”

“I will,” he says, forcing himself to believe it.

All he can do is row and look for street signs which, when unbent, are miraculously the same.

They both get in the canoe and Kalani shows him how to paddle—long strokes, one side and then the other. He drops her off at his house and doesn’t leave until she waves to him from the upstairs with her wife and kids.

Then he is paddling through Sacramento, picturing his children, picturing Ayla, and letting the thought of them blot out any comprehension of what he is seeing around him:

people holding each other on roofs—no one attempts to flag him down—an old man's body face down in the water, his city transfigured. All he can do is row and look for street signs which, when unbent, are miraculously the same.

Then he is at the daycare building and it's locked. The water is halfway up the door. He bangs on it from the canoe, yelling his children's names.

"Conrad! Alice!" He hears nothing on the other side and imagines them floating face down like the old man. He's about to tear the door off its hinges when he sees the writing on it.

Evacuated to North Capitol steps, it says in black marker.

The journey from S Street to M Street is the difference between a city and a rapid. The Sacramento River has overflowed its levees and it is spewing water in all directions. He has to paddle as hard as he can to go a few meters.

An ambulance goes by on a freeway overpass. He hears howling. He looks around and sees a pack of dogs on top of a truck. Their dog walker is holding their leashes and they're howling at the ambulance like it's the moon. He catches the dog walker's eye — a girl in her 20s with a gap in her teeth, and just for a second, the two of them smile at each other.

"I can come back for you once I get my kids," he yells to her.

She shakes her head. "I won't leave them." She means the dogs. There are too many to fit in the canoe. She salutes him.

The Tower Bridge road is completely under water when he turns onto the Capitol Mall. The water is moving fast and he rows with a strength he didn't know he had.

He sights the capitol. The steps are filled with people. Children are chasing each other and splashing water but he doesn't recognize them. He paddles as fast as he can. He hits the steps and he's about to jump out of the boat when a guy yells, "Tie it off!" He throws him the rope.

Then he is roving the steps, yelling “Conrad! Alice!” He inspects each child, but they continue to be little strangers.

“Rob!” He hears his name. He turns around but the crowd is dense. “Rob!” A brown woman in scrubs cuts through. She has never looked more beautiful. He runs to her and takes her in his arms, buries his face in her hair. Then he feels small arms grab his legs. They are together—the four of them—and they are alive.

“If we make it through this, we’re moving to Vorden and taking over Dad’s orchard,” Ayla says. They’re rowing together with the kids between them.

“Almonds are illegal,” he says.

“Ours are grandfathered in. Historical Registry.” She winks at him.

“What do a doctor and an engineer know about farming?”

“We’ll figure it out.”

“A fish!” Conrad yells and wakes Alice who had been asleep in Ayla’s lap. They all look into the water. He’s right, there are fish swimming around them. They’re the size of his hand and they have silvery spots.

“Good eye,” he says, and kisses his son’s head. “Are they salmon?” he asks Ayla.

“Hell if I know.”

“They are!” Conrad says. “And they’re babies.”

“Where did you learn that?” Ayla asks.

“In school. The baby salmon live in the river, but only if the river is healthy. They’re a good sign.”

“No more salmon,” Alice says, and goes back to sleep. They are not rowing home. They are rowing back to the hospital. Every doctor, including Ayla, has been called in. She directs them to the loading dock at the back of the building, which is miraculously dry.

“When will you be home?” he asks.

“They can’t keep me longer than two days,” she says. Then she hugs and kisses Alice and then Conrad. The kids protest but they’ve been trained in these partings. Then she kisses him goodbye, and her smell envelops him.

“I love you,” she says, and climbs out of the boat.

This is the last time he will see her. In a few hours, half of the hospital will collapse on top of 800 people, and one of them will be Ayla.

For the rest of his life, good days and bad days will be determined by one of two thoughts: a bad day—*I should have forced her back into that canoe*; and a good day—at least *I got to say goodbye*.

Vorden, California 2090

He woke with the sun, which was out. The rain had stopped and when he put his old feet on the floor, it was dry.

His head throbbed. He went into the kitchen and saw the empty whisky bottle on the table and remembered why. His screen told him his kids were worried about him, and he sent back a comm saying he’d made it. Then he steeled himself and went to the window.

The orchard was a lake. The trees rose out of it like beams under a pier, their white flowers diminished by the rain, but still there.

He found his waders in the closet and went out onto the porch. The house was an island above 3 feet of water. He went down the porch steps one at a time, thinking there would be a current, but the water was calm and still and when he sloshed onto the ground the water level was just below his belly button.

He walked to the closest almond tree, silhouetted against the sky, running his hands along the surface of the water. It was cold and crisp, and the thought that was always near found him again. *Ayla would have loved this*.

He put his hands on the tree’s trunk, fingers gliding into the ridges of its bark, and looked up into the canopy. It

was a little cloud. Then something splashed him—a fish. He looked down. There were young salmon swimming all around him, and he watched white almond flowers float down and land on them as they swam between the trees.

Second Place Winner, 2024

Zoe Young (she/her) is based in San Francisco, where she serves as head of creative content for The Nature Conservancy in California and teaches playwriting and screenwriting at Berkeley City College. You can read more of her fiction in McSweeney's Quarterly Concern and Identity Theory Magazine. She is currently at work on a novel. Find her at ZoeYoungHere.com.

Mikyung Lee (she/her) is an illustrator and animator in Seoul, South Korea. Her poetic and emotional visual essays focus on the relationships between people and objects, situations, and space.



Chapter Four

Gifts We Give to the Sea

A mother must come to terms with her child's identity, her husband's passing, and the changing landscape of their community.

Author: Dinara Tengri

Illustrator: Molly Mendoza

*"You must have not gone too far
if you were able to find your way back."
-Kazakh proverb*

<i>Aul</i>	<i>village</i>
<i>Dastarkhan</i>	<i>dinner table, feast</i>
<i>Toi</i>	<i>Feast</i>
<i>Beshparmak</i>	<i>Central Asian dish made from lamb, flat dough, and broth</i>
<i>Piala</i>	<i>Small ceramic bowl</i>
<i>Balam</i>	<i>My child</i>
<i>Zhuregim</i>	<i>My heart</i>
<i>Apa</i>	<i>Aunt, grandmother</i>
<i>Apam</i>	<i>My mother</i>
<i>Ağa</i>	<i>Uncle, older brother</i>
<i>Seksewil</i>	<i>A low thorny tree native in Aral</i>

Six years ago, Madina's daughter left their home aul, Zholaman, by the North Aral Sea and never came back. In her stead, came a son.

Madina had always known that Aizhan was different. From the moment she had said her first word, she didn't speak like any girl Madina had known. God plays funny tricks sometimes, doesn't He? If God had made Aizhan this way, who was Madina to oppose His will?

When her son had returned home, he held his mother close, and she inhaled all the smells of the big city, and of changing times. He then opened his passport, held it up to his mother's face and said, "My name is Zhan now." And so Aizhan became Zhan. The moon had set but its soul remained. Madina took her son's face in her bony, dark hands, and for the first time, she saw how much he looked like his father.

The next day, Madina prepared a dastarkhan to welcome home her son. She made deep-fried boursak, and they slaughtered a sheep to make beshparmak. The smells of

meaty broth filled the dry saline air, reminding Madina of the tois their family used to throw, back when Zhan's father was still alive. When they hadn't yet buried their eldest son.

"Aren't you going to invite our friends and neighbors, apam?" Zhan said, while he was stirring the meat in the boiling broth.

"Later, balam," Madina said, keeping her eyes firmly on the dough she was kneading. "Today, I just want to have a nice meal with my son."

"But what kind of toi are we going to have if there's only the two of us?" Zhan said, laughing. "At least let me tell Mergen-ağa that his favorite troublemaker has come home. He'll bring his wife and grandchildren."

Wiping the flour off of her hands with her cotton apron, Madina said, "Mergen moved from Zholaman, balam. His son got a new job in Shymkent and took all his family with him."

If Zhan was shocked or saddened by this news, he didn't show it. He must have known it. Must have seen the ghostly streets of his home aul when he came back. People have been fleeing Zholaman, abandoning their homes, severing their roots. Madina didn't blame them. She would've gone herself if she were even a decade younger.

There's an old Kazakh proverb that says, "An onion can be sweeter than honey if it grows in your Motherland." But in the dried-out basin of the old Aral Sea, honey tasted like salt, and onions tasted of nothing at all. The soil was saturated with salt and pesticides that were left behind as the sea dried out. And as the sea kept dying, so did the fishing auls around it.

Are you ashamed of me? Zhan seemed to be saying as the silence hung thick between them. Was Madina embarrassed to show her son to her friends and neighbors? No. But even as guilt was eating at her in that moment, Madina knew she was only trying to protect her son from evil eyes and venomous tongues. She could already hear the

gossip at the regional bazaar, those no-good women like Karashash and Aitkanym spreading rumors about her Zhan, distorting the truth to plant seeds of anger and fear among their neighbors. If Zhan had come here to stay, he would have to face all those sins sooner or later. But today, Madina got her child back, and for this one day, she didn't want to worry about his safety or his heart.

And yet, the dastarkhan was only half full. The emptiness left by Zhan's father and brother felt even stronger with Zhan back at the family table, a harsh reminder that it was just the two of them now.

"You need to start looking for a job, balam," Madina said, pouring the hot broth in her son's red piala. "My pension is barely enough to feed just one mouth."

"Don't you worry about that, apam. I came back to Zholaman with a purpose," he said, taking the full piala. "I'm going to help save the Aral."

"Oi bai, zhuregim!" his mother burst out in laughter. "How are you going to do that? God himself couldn't save the Aral if he wanted to."

But her son didn't say anything. He had that look in his eyes he would get when he was up to no good. *He came from my flesh, I raised him. Then why does it feel like I don't know my son at all?*

When Zhan was young, he used to gather all the children in the aul and take them to the saline desert that was the shore. The children used to play on the ancient seabed and dig out fossilized mollusk shells from the hot sand, much to their parents' disapproval. The children inhaled the saline air filled with dangerous remains of the pesticides, not knowing they were cutting their young lives short with each breath. But no amount of threats or punishment could keep them away from that strange barren landscape. "It made us feel like we were exploring an alien planet," Zhan had explained to his mother once.

The price they had all paid for living so close to the Aral was high. Zhan's childhood friend Tolganai died of throat cancer when she was 14. When Madina's niece had her first baby, he died within weeks—killed, as the doctor had explained, by the toxins in his mother's milk. Zhan's older brother, Aidar, died the following year, after the pesticides got into his blood, altering his cells so much that they became the enemy to his own body. He was 18. *What are you doing here, my boy?* Madina thought, looking at her son.

Later that day, drawn by the smells of meat and jusai herb, Aidar's two old friends came knocking. There was Eset, the grifter who spent most of his days hiding from his wife. And Erbol, who owned the only fishing boat left in the aul. "What do you want, you devils?" Madina said, holding the door half open.

"Sälemetsyz-be, Madina-apa. How are you doing today?" Eset took off his baseball cap and bowed his big head.

"We heard that Zhan came to visit us yesterday. We just wanted to say hello," Erbol said, smiling shyly.

But it wasn't the boys eating all the beshparmak that the old woman was worried about. The very moment she had been putting off was here.

"Look, lads, it's been a long day, Zhan is tired—" "Who is it, apam?" Zhan came out into the hallway, and Madina had no choice but to open the door and let the guests in. *You can't hide him in his room forever.*

Whatever reaction Madina was expecting, this was not it. Eset and Erbol seemed surprised to see the former object of their boyish fantasies stand before them as a grown man. There was curiosity, excited shouts, and not-so-polite appraisals of Zhan's new appearance.

"So, you finally did it, you dumbass," Eset said, shaking his head and patting Zhan on the back. "Took you long enough."

“For your information, I did it two years ago, but I couldn’t tell you sooner because your mouth never closes.” Zhan laughed, but in those cheerful words was a silent accusation that stung Madina, even if it was unintentional. He had told his friends before telling his own mother. He didn’t want his mother to find out from a gossiping tongue. Who else knew the real Zhan before she did?

“You look very nice,” Erbol said, his eyes lingering on Zhan’s face. “Never pictured you with a beard, though.”

“You call that a beard?” Eset scoffed and pinched Zhan’s stubbled cheek. “You’re gonna have to try a little harder than that, brother.”

“Al, boldly! Dinner’s getting cold,” Madina ushered them back to the kitchen.

At the dastarkhan, Eset retrieved from his denim jacket a carefully concealed bottle of vodka. “So, what are we doing here, mourning the death of our sister or celebrating the birth of our brother?”

“Just pour the damn vodka, you idiot!” Erbol rolled his eyes.

Madina watched the three friends toast and down their shots in a bitter unison. And soon enough, for a brief moment, it did feel like she had her family back; the warmth of the air around the dinner table, the familiar laughter. Years ago, it was Aidar sitting where Zhan was sitting now, and the three childhood friends would spend hours planning their futures and boasting about their romantic escapades.

When Aidar died and Aizhan went to university, their friends were no longer regulars at Madina and her husband’s home, paying only guilty courtesy visits, spurred on by their parents. According to Kazakh tradition, when a family member dies, your friends and relatives must invite you for dinner for a full year. But who would invite Madina when the aul was almost deserted, a proverbial ghost town?

“Apam, we’re going for a walk. I need to walk this meat off.” Zhan kissed his mother on the cheek. “Don’t do the dishes. I’ll do them when I get back.”

But Zhan did not do the dishes when he got back like he promised. He came home after midnight, drunk, with a feverish blush on his youthful face. So drunk he was that he had to be propped up by his two accomplices, who were not as drunk as their friend but were still laughing loudly and sweating like they’d just run a marathon.

Cursing and lamenting, Madina let the three musketeers in and made them all tea. *Some things never change*, she swore to herself, remembering when Zhan—still Aizhan then—would stay out late with her friends, driving her mother up the wall with worry. But what could Madina do? She couldn’t control her child any more than she could summon rain.

“What have you hoodlums been up to tonight? My son isn’t back one day, and you’re ruining him for me?” said Madina, unable to truly be angry. She poured strong black tea into four pialas.

“Don’t be mad at us, Madina-apa,” Eset cooed. “We’re so happy to have Zhan back. He’s gonna help us save the sea.”

“Is that so? And how are you going to do that, balam?” She couldn’t help the sarcastic remark.

“He’s going to catch fish with us,” Erbol offered under his breath.

“No, not catch fish. I’m gonna study the population of the sturgeon here in the North Aral,” Zhan slurred.

“That’s right, the professor here is gonna save our fishing industry with science,” Eset said and pounded Zhan on the back, almost making the other man choke on his tea.

“Not save,” Zhan said, wiping the tea from his face. “Study.” He shrugged in an attempt to appear nonchalant but

looked much like his father when he would get himself in trouble.

“Why do you need to go out to sea to do your research? Why can’t you do it from land? You’re a scholar, not a fisherman. You’ve never even set your foot on a boat.”

“Please, apam, can we not do this tonight?” Zhan said, wincing. Had Madina not been so upset in that moment she would’ve seen that her son was hurting; that something was weighing on him, and that it wasn’t all the vodka he had been imbibing that evening. But how could Madina see anything besides her husband saying goodbye in the early morning to get to his fishing boat, and her knowing deep down, in the darkest corner of her soul, that he would not be coming back from this trip?

“Madina-apa, you should be happy that Zhan is trying to save the Aral. And we will take good care of him on our boat, I promise,” said Erbol, trying to smooth things over, but the tired old woman had heard enough.

“Boldy! No son of mine is killing himself sailing those polluted waters. Get out, you devils, before I call your wives. Gonna get my child killed with your drunk nonsense. Al, ket!”

After she had slammed the door behind the drunk bastards, she went back to the kitchen fully set on giving her son a piece of her mind, but Zhan was already gone.

“Zhan, balam?” But only the ticking of the clock answered her call.

Sighing, Madina sat back in her creaky old chair, put her hands over her face, and wept.

Dawn came, cold and gray. Eyes puffy and head heavy as if she herself had been drinking all night, Madina went to look for her son.

She found him on the naked shore by the carcass of an old trawler that had gone brown with rust. Zhan was a tall, thin figure standing in the sand, like a stork. That was what he

had always reminded her of when he was little—a baby stork. Tall and lanky and awkward, never quite finding himself in his own skin. Madina knew why—now. God had made him this way. Was it God that had given him a restless heart too? Or was it his father’s blood in him, roiling, boiling, drawing him out to sea like an invisible tide? *My son*, she thought with tears welling up inside her again. *My dear, beautiful boy*.

She watched on in silence as Zhan, hungover and hurting, was surrendering himself to the saline wind, letting his shoulder-length hair fly. How he must have missed the Aral in all its salty, miserable dryness. He had lived in big cities all around the country and had traveled abroad, and his heart must have ached for the harsh winds of his homeland.

It looked from a distance like he was praying, or meditating, and Madina felt like a criminal intruding on a private moment. But he looked so small, so vulnerable against the vast gray desert, and she wanted to make herself big and stand between him and the toxic waters like a wall—to protect him from the small, vindictive minds that would no doubt try and hurt him.

A gust of wind blew in from the west, almost knocking Madina off her feet. Zhan must have heard her gasp or seen her stumble from the corner of his eye, for he was now running toward her, himself stumbling in the treacherous sand.

“Apam, what are you doing here?” he said, eyes full of unspoken hurt. “You already made it clear how you feel about me going out to sea.” There was a kind of finality in his words that told her that his mind had been made up.

“I just don’t understand, balam,” Madina sighed, dusting the sand off of her dress. “You have traveled all across the world, and you can go anywhere you want. Why come back to Zholaman?” *Don’t you know that this place will never be what it once was?*

As if having heard her unspoken question, Zhan said, “You don’t turn your back on a loved one because they have

been abused. It's the same with your home. You have seen the Aral in its prime, even if you don't remember much of it. I haven't. And I will never see it fully restored in my lifetime, but I have a chance to do something good here."

Her eyes went over the naked seabed and the dry seksewil that was trembling in the wind, sand and salt stuck in its thorny branches. One of Madina's earliest memories was of her father coming home from a fishing trip. Standing at the bow of his boat, tall and smelling of fish, he would haul up his daughter on board and she would drown in his strong, sunbaked embrace.

Her father would bring Aral trout and rudd, full nets of them. And sturgeon. Those terrifying fish with scales like dragons both frightened and excited the little girl.

Once the Soviet authorities directed the rivers that fed the Aral from the sea to irrigate the new cotton fields in Uzbekistan, starving the Aral of its life source, the sea began to shrink. Every day, the shoreline was getting farther and farther away from the auls, and the little water that was left became so saline that many fish died out. And each year, Madina's father would bring home less and less fish, until he hung up his nets for good and started driving the water hauler to feed his family.

But now, some half a century later, things were starting to change. Little by little, the sea was starting to come back. Ever since they had built the Kökaral dike in 2005 in the north, their corner of the Aral Sea was making its slow, timid way home. That was when the first fishing boat sailed from the distant shore for the first time in what felt like a lifetime. It was Erbol's boat, she remembered, and the young men had come back with sturgeon and rudd. She hadn't seen this much fish since Aidar was a little boy.

"You have always been too good for this world, son. I don't know if Zholaman deserves you"—or *if I deserve you*—"but I don't want you to meet the same fate as your father."

“Dad’s death was an accident, apam. It wasn’t the sea that had killed him. If his mate had fixed the engine like he was supposed to, they’d both be alive today.”

As the Aral was drying out, the fishermen of Zholaman had to go farther away from the familiar waters, staying out longer. When Madina had heard that the boat engine had exploded, killing the two-man crew, she didn’t want to believe it. If he had drowned during a storm, at least there’d be no one to blame but God himself. But it wasn’t God that had killed her husband. His death was a result of recklessness and laziness.

Madina also realized that this was the first time the two of them talked about Zhan’s father’s death since the accident. When they had held their final wake, on the one-year anniversary of his death, it felt like they had buried all the pain and grief with him. Madina should have been there for her son, and maybe if she had, he wouldn’t have left in the first place.

“I went to visit dad’s grave yesterday. And Aidar’s too.” Zhan said it so matter-of-factly that Madina didn’t immediately realize what it was he was saying. Women aren’t allowed in a Muslim cemetery, and it hadn’t occurred to Madina that Zhan could now visit his family grave.

“We should have left Zholaman ages ago,” she said, shaking her head, “before we lost your father. Before your brother got sick.” It felt like a bitter kind of relief saying these words out loud. She had been blaming herself for all the misfortunes in silence, the guilt nestling itself deep inside her marrow. “Your father wanted to leave, but I was too afraid to start over.”

They had been making their way back home, feet sinking into the sand, the sun in their eyes promising them another hot day.

“It wasn’t your fault that Aidar died, apam.” Zhan said it with so much confidence that Madina almost believed him.

She took her son by the arm, half leaning on him for support and half guiding him home, her little stray lamb.

“Do you really think you can help save the Aral?”

“I’m just going to study the fish population, apam. All I can do is research, and hope that this research will help us understand how we can heal these waters. You know, there’s a theory that the Aral has always been growing and receding, because it depended on the rivers feeding it. But when the Soviets bled it dry to grow their cotton, they disrupted this natural cycle.”

“Can it ... I don’t know, resume this natural cycle?”

“I don’t know. Maybe too much time has passed. Maybe too much damage has been done. And maybe the North and the South Aral will never be one again.” He bent down, picked up a white seashell from the ground, and blew sand from it. “And maybe we’re not meant to try and make it the way it was. With this new dike they built and with our research, we’re helping the Aral—helping ourselves transition to a state that is natural to the sea, and to us. One that is more true to who we are now.” He started laughing, and rubbed his neck, “I’m sorry, apam, I sound like a boring lecturer.”

Madina liked it when he talked about the sea and about them as if they were part of the Aral. She had lived in Zholaman her whole life. She had grown blind to its beauty, seeing only the seksewil and the dry sand. But Zhan, with his science, and his intuition, he was able to see something in this land that was worth saving, worth dedicating your life to. And if Zhan thought the Aral was worth saving, who was she to disagree with him?

Nothing is created fully formed, Madina thought to herself. Every living thing is in a constant process of change, transforming from one state to another. Zhan was right, the sea would probably never come back to what it once was and reclaim all its stolen territories. But it could still be something good. With a little help and a little love, it could come closer to its new true self.

Dinara Tengri (she/her) is a Kazakh-Swedish author, podcaster, and digital creator who lives in Malmö. Her short stories have been published in a Swedish anthology (Arkipelag) and Support for Indie Authors. Her record time for completing Prince of Persia 1989 is 29 minutes. She would like to dedicate this story to her old writing partner, Melissa Judson.

Molly Mendoza is an artist living in Portland, Oregon. Through their work, they explore the complex emotions of interpersonal relationships and self-love with a focus on layered visual storytelling, mark-making, and color. They write stories, they paint murals, they teach students, and they draw.



Chapter Five

A Seder in Siberia

The arrival of a surprise visitor at a family's Passover celebration reveals the true story of how they came to be climate exiles.

Author: Louis Evans

Illustrator: Mikyung Lee

The cupboards locked, the kitchen swept clean with a broom of pine twigs, the children each dressed in their one good outfit—a sleight of hand transforming a band of free-range ragamuffins into a sort of pocket-sized town council—the sun creeping down, down, down toward the boreal horizon, and at last none of us could deny it: Jonathan wasn't coming.

So now it only remained to tell Mom.

I tried first, because I'm weak. "Don't you think it's time to go get Dad?"

"Miriam, your father's tired," she told me. Which is one way to say *dying of cancer*, I suppose. She was setting the table, for the third time. "Besides, your brother will be here any minute. *Then* we'll get Dad. Don't be impatient."

I bit my lip to keep from shouting. We had sworn a sacred sibling oath not to yell at her, but she does not make it easy.

David's turn. "Maybe we should get started anyway, and Jonathan can *join* —"

"Just *wait*, I told your sister —"

"Do you even know *when* —"

"He'll *be* here —"

"Have you even *spoken* to him —"

"I sent a vid, he's very busy —"

Despite my resolution, that pushed me back over the edge. I was bitterly grateful that my wife was stuck with her herds tonight; she hates to see me angry.

"You don't even know Jonathan's coming at all!"

"Miriam, I *said* I sent—"

"You don't even know if he *got* it, the loons—"

And then Leo spoke. He didn't have to shout; he never does. It's funny how the baby of the family became the one we all listen to.

"Mom," said Leo. "Jonathan's not coming." Silence in the house, and darkness, too, with only a sliver of sun left and the candles not yet lit.

"I'd better go get Dad," Mom said.

The seder was my father's domain. Everything about it was his, year after year. The seder plate was his seder plate. The molding Haggadot, spiral-bound with ancient fossil plastic, were his. Even the recipes, suitably modified for our new diets— hazelnut matzah and algae karpas—came from

his family. And, of course, he was the leader of the service, reading the familiar story word for word, year after year.

This was not the first seder of his illness. Last year, when my shrunken and sallow father had taken his shuffling place at the head of our seder table, a remarkable transformation overtook him. It was as if the winds of other times and other places filled him like an airship, and suddenly he was not a suffering, shriveled, cancer-crossed dad; he was my father from childhood, from out of every childhood, from when the world was new.

For the fourth cup of wine, for the fourth promise of G-d, he read, just like every year of my life, “I will take you to be MY people,” and deep in my bones I felt the truth of it, that I was of G-d’s people and *of my father’s people*—

That was the man my father was. Had been. This was not the first seder of his illness. But it was the first seder of his death.

Dad entered the dining room, with Mom holding his elbow. He made it to his chair. He sat down.

Nothing happened. We all sat there for a minute, in unfamiliar silence, even the children waiting for what would happen next. Dad blinked at the Haggadah Mom carefully placed in front of him. He tried to lift the first page.

It was too much for him; he let it fall.

I found myself, of course, looking to Leo at the foot of the table, and I knew David across from me was looking to the same, and my kid began to squirm, and Leo’s face as he stared at Dad showed no legible emotion at all—

“I guess I’ll read,” said Mom.

What is Passover? David’s the schoolteacher. He’s good at explanations. Me, I don’t explain anything. I just gene-tweak mammoths. Working as an eco-pheno-genobiofeedback climate engineer, you get in the habit of seeing things as very complicated. Is this stand of old-growth taiga spruce a valuable carbon sink? Or is it a “bad voxel” with a

dangerously low albedo compared to adjacent snowy grasslands, primed to absorb too much sunlight and turn it into heat? Or is it a useful landmark for navigating a mammoth herd? Or is that bad, because we want to lure the herd onto a different track to reduce the risk of inter-herd conflict? Or—

I write a lot of reports.

Passover is a holiday that celebrates the liberation of the Jews from Egypt *and/or* Passover is a collection of songs and stories and quizzes and weird little games, like a mixed-up child's toy chest of traditions *and/or* Passover is when twenty million of the world's most anxious people get to explore a fun, seasonal set of dietary restrictions in addition to the year-round ones *and/or* Passover is the candles, and the wine, and the prayers, and the songs, *and/or* Passover is a story of a marvelous escape by refugees trapped between an army and an ocean—

I write a lot of reports, and then I go in and change the mammoths. Back in the Pleistocene, extremely long biofeedback loops took care of that automatically, but these days we are on a tighter timetable. So I made the mammoths snow white; that was me. The genetic sequence from polar bears is very well characterized and it takes transcription easily. A white mammoth absorbs less sunlight; the glittering fur reflects more heat back into space. Every good voxel counts.

What is Passover?

Basically, you get all your family in one room, deny everybody food until you've made it through a two-hour interactive lecture, while constantly drinking more and more wine, and then act surprised when a fight breaks out.

"Mom, don't you think—"said David. But she hadn't listened to him for forty-two years; why would she start now?

“Now in the presence of loved ones and friends, before us the emblems of festive rejoicing—”

She was off. What could we do? We read along, all of us chorusing in unison, siblings, spouses, kids, even Dad managing to mumble. “Remember the day on which you went forth from Egypt, from the house of bondage—” And what do you know, she was good.

It was a little cynical, perhaps, to judge my own mother’s reading of the seder strictly on its theatrical merits, but surely we Jews have earned our cynicism. And she was good. Deep voice, solid rhythm. Kept good time in the group readings and didn’t interrupt my kids when they stumbled over the longer, more ornate words and transliterations. I didn’t have to hate this. So long as I kept my eyes off of Dad.

“Seder,” in English, literally translates as “order.” Nevertheless, our family never reads the Haggadah in the official order. Instead, the whole thing is held together by a complicated web of bookmarks and marginal notes. It’s not the original system, but it works.

That’s why, not twenty minutes into the seder, between the first and second cups of wine, we got to Elijah. There’s a superstition about Elijah. You leave an extra cup of wine out for him, and then you send the little kids to open the door for Elijah. Then one of the adults sneaks the glass of wine, or secretly rocks the table, and, *Look, kids, it’s Elijah, he’s drinking it!*

In the Book of Kings, Elijah smites four-hundred pagan priests with fire from heaven. In the Haggadah, he plays a silly little haunted-house drinking game with kids. Being a grown-up is like that, I think.

“May the All-Merciful send us Elijah the Prophet to comfort us with tidings of deliverance,” said Mom. “Now let us open the door for Elijah.” David and my kids knew their parts, and they ran, all in a giggling mob, to the front door to fling it open—and they *screamed*.

The man at the door did look like Elijah. He was tall, and gaunt, and bearded. He was bundled for the taiga, not the deserts of the Holy Land, but his clothes were stark and worn. One arm was tied up in an impromptu sling.

I must have run for the door when the kids screamed; we all must have. I don't remember; I never remember running to my kids. I just remember staring, and staring, and *staring* at the man in the door.

It had been years. There was no reason that the kids should recognize their uncle Jonathan.

Mom hustled Jonathan in the door and she hustled the door shut. She hustled him out of his traveling clothes, and she worried over his injured arm so much that she almost fainted. She ran back and forth with ever-increasing energy and declining effectiveness until Leo stopped her.

He got her back into her chair at the head of the table, got Jonathan seated at the foot beside him. Dad had not stood up to greet Jonathan; I did not know if he understood that Jonathan had been gone and now he was back. I didn't know.

David asked Jonathan about his arm. "Grolar bear attack," he replied. It wasn't surprising. We've been driving up the population of grolars for years now. Larger apex predators produce upward cull pressure on herbivore size, which increases winter survivability and population throughput, ultimately allocating more biomass to the mammoths overall. But push it up too hard, though, and you kick off a predation double-bust, which throws your whole cycle out of whack—systems are complicated.

The kids were probably desperate to ask Jonathan about the grolars, but they were still scared of him, and he didn't seem inclined to talk much. So I didn't ask any follow-up questions, and neither did David.

"Mom," said Leo, "keep reading." Jonathan started in his seat, turning to Leo. "Dad reads," he said. Leo did not turn to face him. They had been so close, before, the baby of the family and the eldest; Leo had idolized Jonathan. Jonathan

was the sort of man Leo had always wanted to be, since long before the rest of us even knew he would grow into one. But then Jonathan vanished. No surprise Leo took it hard.

“This year Mom reads,” he said. Jonathan looked at Leo. Looked at Mom. Looked at Dad. Looked away. In a dining room crowded for seder, it’s hard to find somewhere to look that’s not another watching face, but he managed.

Mom was still staring at her prodigal son, drinking in his face, but Leo managed to catch her eye and gave her a firm nod, and she started reading again.

Passover is a child-friendly holiday. Not really the story of the Exodus itself, which has an unavoidable infusion of the Bronze Age macabre—drowned babies, Moses beating and killing an overseer, blood on the doorpost, spontaneous death plague—but certainly the seder is. The songs have an easy nursery-rhyme simplicity. The ritual food appears in handy sandwich format. The children have dedicated readings; “Ma Nishtanah”—“Why is this night different from all other nights?”—is traditionally sung by the youngest child present.

But the Four Children is not, I think, exactly child-friendly. It’s an odd little bit of text, a piece of Talmudic psychological gristle undigested by medieval pageantry or modern bowdlerization. It notices that the Torah commands us to teach our children the story of Passover four distinct times. Now, a mammoth geneticist would see that reduplication as merely a healthy copy-error redundancy in an inherited text, but the rabbis of the Talmud thought differently. They thought that every word was a perfect, unique gift from G-d.

So they said that four commandments meant four different ways to teach; four different archetypal children. The good child, the wicked child, the simple child, and the one who does not even know how to ask. Each of them receives a different instruction.

The passage is child-unfriendly, not through sex or violence but rather through its crushing essentialism. These days we tell our children, “You can be anything you want to be.” These days we tell them, “You live in a special time, an important time, when there is so much work of *tikkun olam*, of repairing the Earth. So much work, so many jobs—from rewilding the rainforest to herding mammoths!—and one of those jobs out there is just for you. Just as special and unique as you are.”

But our sages teach us: There are four children. Kiss-ass, shthead, stupid, and double stupid. In my family there were four of us, too. Don’t imagine that we missed that part.

In the end, it was simple bad luck. Most of the readings in our Haggadah are delivered solo by the leader, or together by the entire table. But the Four Children is tagged with that most perilous note, “A Participant.” Which means we go around the table, clockwise. I had the wise child. That gave Leo the wicked.

“The wicked person says, ‘What is this observance to *you*?’ Because they say ‘to *you*’ and not ‘to *us*,’ they reject the unity of G-d and the community of Judaism. To them we respond sharply—” and suddenly Leo was looking at Jonathan, staring at him, teeth flashing as he bit out words, “it is because of what G-d did for *me* when *I* went forth from Egypt, for by abandoning us, *you* would not have known redemption.”

Time for the chorus, and David and I leapt in, “the wicked one withdraws themselves from anything beyond themselves—” and Mom was reading along, and the kids were doing their best, and even Dad was gamely mumbling, but Jonathan didn’t say anything. Neither did Leo.

We trailed off, a comet tail of phonetic rubble. Jonathan’s turn now, but he still wasn’t saying anything. His Haggadah lay open on the table, still open to the page of the wicked child.

“Jonathan,” I said, in the gentlest voice I could manage. “It’s your turn.”

My older brother has never listened to me. “I don’t deserve this,” Jonathan said to Leo. All across Leo’s face I could see pain congealing into anger. “Of course you do,” Leo said. “You left. One day, you just got it into your head to leave us.”

“No,” said Jonathan. “Dad told me to go.”

Jonathan left us when he was nineteen. There was no warning. He’d been fighting with Dad more. I think. It was hard to tell. Jonathan and Dad both had a strange, oblique way of arguing. Nothing like me or David or Mom. Just a coldness that settled between words, between actions, that froze the ground and then kept it frozen. And then one day he was gone.

Leo was fourteen; he’d come out a year and a half earlier. (He’s the only Jew I know who’s had both a bat and a bar mitzvah. Good timing.) When Jonathan left, Leo felt abandoned by his brother. He was devastated. But the rest of us were hurting, too.

It’s a big world out there, and we lived at the very farthest edge of it. I understood that. I could imagine how Jonathan might want to see something different than tundra, tundra, tundra, mammoth. I could imagine how Jonathan might want to escape from the cold in our house and the cold in our family. I could imagine lots of things.

I had to imagine, because he never videoed, never even DM’d. There’s internet service at the house, at least when the loons—network-relay balloons, high up in the stratosphere—form a tight enough chain. These days that’s most days, since they keep putting them up in the stratosphere. Shiny mylar, *amazing* albedo. Very good voxels. Back when Jonathan left, two decades ago, the service was less regular. But he could have at least DM’d. He never did. Well, he never DM’d *me*.

“What?” said Leo.

“Dad told me to go.”

“Just because he threw you out of the house didn’t mean you had to leave the continent!”

“No. It wasn’t like that. He sent me back.”

“He *what*?”

Mom broke in. “You two can catch up later. The simple child—” Leo stopped her with an outstretched arm. “Dad *sent* you? Why? *Where*?” Jonathan shuffled uncomfortably in his seat. He was a big man, even if thinned out from his taiga journey home, but he seemed all at once to collapse in on himself.

“I dunno. Ask him.”

Leo’s eyes narrowed. He turned to look at Dad. Dad stared blankly back at all of us. He blinked. He licked his lips. I do not know if, at that moment, he could have counted his own children.

“Well?” said Leo. “Where did you send him?” Dad blinked again. “The simple child asks, ‘What is this?’ To them —”

“Where did you send Jonathan, Dad?”

“... we say, ‘With a mighty arm’—”

“Where did you send Jonathan?” Leo’s voice was louder than I’d heard it in years.

“... G-d freed us’—”

“Where did Jonathan go?” Leo was shouting now, hands flat on the table.

“... from the house of bondage.”

“Where, Dad!”

“Texas,” said Mom. “He wanted us to go home.”

“Dad’s not from Texas,” said David. “Home is *here*,” I said, at the same time. It’s hard to say which one of us Mom looked at with greater contempt. But she loved Leo, and she spoke to him.

“We never told you,” she said. “We didn’t want you to know.”

“Dad’s not from Texas,” said David. “We’re not from Texas. If we were from Texas —”

“You didn’t move here,” I said. “You were sent.”

Jewish history is a litany of expulsions. First exile, second exile. The Roman diaspora. The Spanish Inquisition. The Khmelnytsky Uprising. The pogroms. The Holocaust. These episodes enter gentile history as genocides, as exterminations, and this is not inaccurate. But the Jews of a later era are descended from survivors, and survivors *fled*. They knew when to flee, and how fast to travel. The story of the Exodus is perhaps not a surprise.

“You could have told us,” said David. “There’s no shame in it. Half of my class’s parents are from Texas—they made new lives, they raised families, they *talk* about it—”

“Yes,” said Leo. “*They* talk about it.” He was still staring at Dad. Dad blinked aimlessly—and blinked again, with sudden recognition, and said, quite clearly and distinctly, “Jonathan.”

Silence at the seder table.

“Jonathan,” he said again. But he was not looking at his oldest son; he was looking at his youngest.

“Yes, Dad,” said Leo, quietly.

“Jonathan, you’re back.”

“Yes, Dad,” said Leo, and beside him Jonathan mouthed the same words.

“Jonathan, did they forgive me? Can I go home?”

Leo clenched his jaw, his fists. He turned to his older brother. “No, Dad,” said Jonathan. “You can’t.”

What happened in Texas was complicated. Drought in the Rio Grande. Crop failures across the Great Plains, from Nuevo León to Iowa. Mass migration along several distinct axes. Dismemberment of the petrochemical industry. Rocket riots over Project Sunshade. Paramilitary violence and military violence.

System failures are as complicated as systems themselves.

But not everyone who left Texas was a refugee.

“They took me to a museum,” Jonathan said. “I marched in and applied for family repatriation, and they looked my name up on a list and said, ‘You’d better come with us.’ And I thought —”

I do not think I had ever seen my brother cry before. Nobody needed to ask him what he thought. “But I went and they *showed* me, Dad. The Hall of Exiles. They have a museum and *you’re in it*. They have the drone cams and the SWAT group chats and the interoffice wiki. Dozens of people *died* in that holding cell—”

“Hot summer,” said Dad. He sounded ancient. He sounded like a boy.

“You had water and you *didn’t give it to them*.”

“Such a hot summer,” said Dad. “They just kept coming.”

“A new king arose over Egypt,” I said, “and he said, ‘Look, the Israelite people are too numerous for us. Let us then deal shrewdly with them.’”

“Hottest summer of my life,” said Dad. “Nothing like here.”

“Then *why did you send me back?*”

Dad stared, for a long time. His jaw went slack.

“I want to go home.”

We couldn’t get anything out of Dad after that. He went back inside, to where that metastatic shadow-self was eating him.

The next day, out on the range with my wife, checking in on the pregnant mammoths and tagging the youngest calves, telling her the story, I could not believe it didn’t end right then. But the truth is, we kept going. None of us were ready for the seder to end.

We drank all four cups of wine. We counted out the plagues. We ate algae karpas and horseradish from the backyard. The kids hid the hazelnut afikomen. Leo hugged Jonathan. Jonathan hugged Mom. The mammoth brisket was delicious. We sang “Dayenu,” because even a single miracle would have been enough.

Out on the range with Thea, I thought about my parents’ lies. About my father’s crimes. About fleeing, and being sent.

When a loon is near, I could look up my father’s trial. I could dig up his conviction in an old database. I don’t need to, though. The sentences were all the same. *Climate remediation for the remainder of natural life*. Forty years in the desert.

Those sentenced ended up all over. The olam is wide, and there’s more than enough tikkun to go around. “It is not your duty to finish the work, but neither are you at liberty to neglect it.”

The world is very complicated, and sometimes when I try too hard to understand it all I get confused. Which is why I’m grateful for my wife. She gets up in the morning. She puts her feet on the permafrost. She tends to the mammoths. To me, those animals are 5.8 billion genetic base pairs locked in a chaos cascade with maybe half a trillion other ecological variables, bending the curve of an ecosystem away from catastrophe. That’s what I write in my reports.

Thea doesn’t think about them that way. She puts her hands on a snowy, furry flank; a trunk wraps around her shoulders. That’s enough.

So I told her the story, all of it, and I waited at the end for her insight. And because she’s wiser than I am, she waited instead for me. And I realized: I know how the story ends. The same way it always does: *l’shana haba’ah b’yerushalayim*.

Next year in a more just world. Next year, in the city of peace.

Third Place Winner, 2024

Louis Evans (he/him) has been going to Passover seder at his Papa and Bubbe's house since the year he was born. He is a writer living and working in Brooklyn, New York. His science fiction has appeared in Vice, the Magazine of Fantasy & Science Fiction, and Nature: Futures. His climate fiction has appeared in Analog Science Fiction & Fact, Little Blue Marble, Fusion Fragment, and more. He's online at evanslouis.com.

Mikyung Lee (she/her) is an illustrator and animator in Seoul, South Korea. Her poetic and emotional visual essays focus on the relationships between people and objects, situations, and space.





Chapter Six

Accensa Domo Proximi

*At a live art show in the bustling city,
a cook grapples with the coastal home he lost.*

Author: Cameron Neil Ishee

Illustrator: Stefan Grosse Halbuer

It was a typical Thursday, except for the potatoes. Dario and Vin stared down at the heap of them: crispy hash browns here, grilled home fries there. A half-dozen peeled spuds sat in a bucket of cold water, waiting for a turn that wouldn't come.

"Huh," Vin said.

"Huh," Dario agreed.

"I don't think this has ever happened before," Vin commented.

“Not while I’ve worked here,” Dario concurred.
“So what do we do with ... ” Vin gestured. It was a little helpless, a half-limp sweep of the sheer volume of uneaten potatoes in the kitchen.

Zinnia poked her head in from the front-of-house. “Honestly,” she said. “Am I going to have to come back there? It’s turnover in, like, 20 minutes.”

“Nobody ordered potatoes,” Dario told her. “Like, at all. All day.”

“No fries,” Vin said.

“No hash browns,” Dario said.

“No baked,” Vin added.

“No roasted,” Dario said, starting to smile.

“No scalloped.”

“No mashed.”

“No chips.”

Dario grinned. “Oooh, good one. Here: *no latkes*.”

“Damn!” Vin said. “No gnocchi.”

“No gratin.”

“No salad.”

“No hassletop,” Dario said, and Zinnia clapped her hands to get their attention.

“It’s *hassleback*, children! Seriously, how are you cooks?”

Vin flicked a fry at her. “Pretty sure we’re both older than you, fingerling.” He threw a fry at Dario, who caught it in his mouth.

“No fingerlings!” Dario said, around the fry. It was salty and perfect.

“Half that stuff’s not even on the menu. We can leave it for the Lux,” Zinnia said, but she sidled over to shovel fries into the prodigious takeout pouch on her purse.

“The Lux don’t do potatoes,” Vin said.

“*Nothing* potato?” Dario asked, incredulous.

Vin popped his shoulders up and down, and pulled out his phone. “Maybe Jay can pull a special out of the ones we

peeled, but those already breakfast-ified will have to come with us.”

“Well, get to packing up,” Zinnia said. “I wasn’t kidding about turnover. We gotta hustle. You need me to help clean up back here?”

Dario shook his head. “We *need* you to de-potato us,” he said. “We prepped everything, like normal.”

“Didn’t know it was gonna be no-potato Thursday,” Vin said, tossing Dario another fry.

“Didn’t know it was spud Sunday,” Dario said.

Vin snorted, but he was already getting the prepared food stowed in to-go boxes. “How does that one make sense?”

“Day of rest, right?” Dario said. “But, like, for potatoes.”

“Y’all gonna be on a permanent rest, if the B team gets here and the kitchen’s not nice and shiny for them,” Zinnia said.

Dario just laughed, though he did start collecting utensils to stick in the sanitizer. “I’ll tell Jay you called them the B team, and we’ll see about that permanent rest,” he said. When she kept hovering, he realized that she was actually concerned, and changed his tack. “Look, we’re all good back here. Just swap the signs out front, and take as many potatoes as you can on the way out. We’ll be done in no time.”

He was telling the truth: Fifteen minutes later, the three of them were standing on the platform in front of the little restaurant, balancing cartons of potatoes underneath the repixelating sign. Their sluggish system was at least 10 years old, and it took a good while for Amazing Audrey’s Eggs-A-Plenty to shift over to The Luxembourg. Once the algorithm got out of bed, though, it would scrub over everything. Double-A’s had tile, while the Lux favored wood paneling. Yellow and white would be replaced by blue and brown, and the kitschy chicken paintings would flip around to black-and-white landscape photography.

Dario had seen places that had even more settings, and though he didn't spend much time in the hyperwired underground, he'd heard there were eateries that could microcustomize down to the level of the individual table. He toggled on their bullshit security system, mostly out of habit, and went to wait for the Leveler with the others. They were sitting out of the sun beneath the station overhang.

"I mean, I just don't get pings from *dudes in the park*," Vin was teasing.

"Shows what you know," Zinnia sniffed. "Yeong-cheol Min? Seriously? No name recognition there at all?"

Vin leaned around Zinnia, to loop Dario in. "She says there's an old dude gonna be in KSW Memorial. He pinged her."

"The Arts In The Park people pinged me," Zinnia corrected. "I subscribe, because I'm not an uncultured plebeian."

"We're plebs," Vin said, with mock sadness.

"Pleb," Dario agreed.

Zinnia continued as if they hadn't interrupted, which in Dario's opinion was a fairly sound strategy. "Yeong-Cheol Min is, like, *the* greatest living artist of our time, at least in the field of pottery. It's day four of his live performance."

The Leveler pulled up, all shiny chrome and green plastic, and they jostled into a compartment. "So," Dario said, "we're going to KSW Memorial? For pottery? How do you even do a *live show* for pottery?"

"He takes it out of the ground," Zinnia informed them. She paused for a second, while the automated voice reminded them to keep their limbs inside the compartment while the Leveler was in motion, and not to forget their stop. Then she continued: "Day one, he digs up a bunch of dirt, and extracts the clay."

"I thought you needed special dirt for pottery," Dario commented. "Special pottery clay, or whatever."

Vin shook his head. “No, there’s at least a little clay in most soils. You never did that, in fourth grade? Filter out the clay, make your own little pinch pots? That’s like, a right of passage, man. I mean, *were* you even a 9-year-old, if you didn’t make a pinch pot in art class?”

“It didn’t come up,” Dario said, a little shorter than he meant it. He rearranged the cartons of potatoes in his arms, partly so he wouldn’t have to see their faces when they remembered.

“Oh,” Vin said, abashed. “Yeah, sorry, right, I mean —”

He shut up abruptly, and Dario shot Zinnia an appreciative look, knowing she was somehow behind it. She was safer to look at, just then: He doubted she had the capacity to pity him. Compassion, maybe. But pity? He couldn’t even picture it on her face.

She was poised as ever. “The first day, he digs up the dirt. Has to get a permit for it, but who’s gonna deny *Yeong-cheol Min* a permit? Besides, he puts almost all of it back—just keeps the extracted clay. Then, it’s got to sit for a while. Day two, he refines it some more. There’s stuff you have to do, to remove air bubbles and other impurities that could break the work once it’s fired. But then he starts working it, and that’s the really cool bit. Usually, he finishes in a day, but this one is *huge*. My feed is full of pictures, but I can’t tell what it is.”

Vin asked, “So he’s finishing it today? Or still shaping?”

“Still shaping,” Zinnia said. “Maybe he’ll finish today, maybe he won’t. That’s part of what’s so exciting!”

“And we’re bringing a butt-ton of potatoes to this event because ... ?” Dario inquired. “I mean, not that I was doing anything else this afternoon. But still. How is this your solution to the inexplicable potato event?”

“IPE, for short,” Vin put in. “It needs an acronym.”

“So we can eat while we watch the pottery performance,” Zinnia said, as though this were obvious.

“And, like, give potatoes away. To whoever.”

Vin and Dario exchanged a look. Vin’s wide eyes said, *It’s too precious, I can’t even try*. The quirk of Dario’s mouth said, *We’re not horrible enough to tease her over this*. Silently, they agreed. Privately, Dario knew they were both going to ping Jay about this later.

“Sounds like a great plan, Zin,” Vin said, and got one of her to-go boxes added to his pile for his trouble.

“Thanks for the support, Vinnia,” Zinnia said, and they lapsed into companionable public-transit silence.

In Dario’s opinion, the Leveler was misnamed. Sure, it moved up and down between the various vertical levels of the city, but it also ran on a lateral route. *Like a train*, he thought. *Or an elevator. A trainevator.*

“Trainevator,” he said, out loud.

Vin’s eyes lit up. “Eletrain,” he said.

“Escalatrain.”

“Escelatram,” Vin shot back, and Zinnia groaned and put on her headphones for the remainder of the trip.

Ken Saro-Wiwa Memorial Park was several levels down and many blocks over from Double-A’s. They usually finished up with the late brunch crowd just in time to meet the transit rush of kids getting out of school, and this day was no exception in that regard. By the time they actually made it to the park, they’d successfully redistributed nearly a third of the potatoes.

“Hop the Parkline?” Vin suggested, as they exited the Leveler.

“Nah,” Dario said. “I feel like walking. Been standing at the griddle all morning.”

Zinnia guided them in the general direction of the art event, and a part of Dario relaxed as soon as they were under the leafy canopy. The temperature dropped immediately in

this shade, and the cool of it was soothing. Bushy oaks lined every walking path, the Parkline winding unobtrusively between them.

His childhood home had had trees like this, before, though those oaks had been bendier and lichen-draped. It had been the salt that killed them even before the water, and he'd grieved them with the passion a small child can muster for such an occasion. This city was verdant, an intentionality that drew him here in the first place when he had to be resettled. But a place like this, heavy with oaks, would always speak to him in a way the vine-covered buildings and succulent-lined sidewalks just didn't.

When they saw the crowd, Dario's first thought was, *Huh, I guess people do turn out for a live pottery show.*

"I'm impressed," Vin said, echoing Dario's own thoughts.

"Told you," Zinnia sang. "This is a big deal!"

Dario had never been to this particular corner of the park before. The ground sloped down into a sort of naturalistic amphitheater, full of people. The landscape created a hole in the tree cover, and the midafternoon sun poured down on the spectacle in the middle: an older man, graying hair pulled back in a scraggly ponytail, arranging heaps of reddish mud.

Dario's first impression of Yeong-cheol Min was, *I wouldn't recognize him on the street.* The artist was unobtrusive, his features unremarkable and his presentation lacking ostentation. He could have been any of the grandfathers who sat outside their doors on Dario's street, gossiping among each other. He wore much-stained denim overalls and a short-sleeved shirt gone grayish-red from his work, and as Dario watched, he rolled the side of his own pant leg over a patch of clay, leaving behind the texture of the cloth.

"I don't know what I was expecting," Dario said, aloud. "This all seems pretty chill."

The crowd around them was buzzing with the low undercurrent of conversation, and that made the scene even more approachable. The three of them picked their way through the assembled people, offering potatoes to strangers until they were left with just one container each and had arrived at a good spot to watch.

The grassy ground gave under Dario's feet just slightly, as he shifted his weight. Vin held up his own to-go plate, and Dario helped him split their food so that they'd have an equal amount of hash browns and fries. Zinnia carried two types of hot sauce with her at all times, and they took a moment to bicker over which one was better. Then, as they ate, Dario turned his attention back to the live performance.

It was hard to assess what exactly the artist was making, but Dario wasn't quite ready to call it abstract. The curved spires and chunky blocks seemed familiar somehow, in a way he couldn't put his finger on. Staring at it was like getting the ghost of a tune caught in his head, too small a scrap to look up. In such a case, he was relegated to humming it under his breath, hoping to eventually chance upon a lyric somewhere in the crevices of his mind.

Min periodically returned to a box of tools, which he employed to texture the clay in places. There were sharp sticks, scalpels for carving, little wheels for adding tracks. Then, there was the artist's own body: He rubbed his hands over the clay, sometimes dipping them in water. He turned the side of his head against a section, printing the clay with little lines from his hair. Gently, ever so gently, he brought his bare feet up to the work, and squished the clay between his toes. The familiarity of it was getting to Dario, in a way he couldn't express. *I know this. How do I know this?* He couldn't recall having so much as heard of this artist before, much less seen his work. And, as he'd told the others, Dario had not had the kind of childhood where one was taught to

play with clay. There was no obvious reason for this feeling in his chest, and he tried to push it away, uncertain.

In front of the patch of grass that Dario, Vin, and Zinnia had staked out, an older woman sat in rapture. Dario watched her watch Min, and was more than a little disturbed to see tears tracking down her face. The most unsettling thing was, he could feel the tightness in his own chest, too. He didn't want it, couldn't understand it.

This is a goddamn live pottery show, he chided himself. What is so upsetting about it? There's nothing wrong here, nothing bad. What's going on?

He turned to his friends, but they seemed unaffected by whatever was taking place. Zinnia was taking pictures, swiping through different filters. Vin was about as interested in the potatoes as he was in the artwork unfolding before him. Dario watched for a good 10 minutes before he put it together: Min added a lump of clay, sticking it onto a wire such that it might balance at a precarious angle. Then, he added another. And another.

Archipelago. The word popped into Dario's mind, and he course-corrected immediately: *No. Barrier islands.* He realized that he was looking at a stylized depiction of a coastline. *His* coastline. Before.

He could name them from their shape, as they appeared under Min's hands: *Cat Island. Ship Island. Horn, Petit Bois, Dauphin.*

His breath caught in his throat, and the names came fast as he raked his gaze over the work, this time seeing it for what it was. *Mobile Bay to the east, Lake Pontchartrain to the west. On one side, the Pascagoula River, where it curves around Moss Point. On the other side, Bay St. Louis, ringed by Henderson Point, Pass Christian, De Lisle.*

Dario's eyes tracked the snarl of the Wolf River, then drifted over, almost against his will, to the looping tangle of earth and water that was where the Biloxi met the sea. In this work of art, the land was still land, worked in clay, but the

water was represented by air. An absence. Not the presence that had risen, consumed.

Old Fort—we used to hunt for frogs. Davis Bayou. He watched Min shape Deer Island across the mouth of the Bay, and inside his shoes he flexed his toes, remembering the sand. *Why is he doing this? How does he know?*

It occurred to Dario that there were maps, that the artist could have consulted records to know this place that was. He looked for, and found, the little inlet where he'd grown up. *Halstead Bayou.* It would have been easy to miss, easy to exclude. A sliver of a place, an intertidal zone at the end of the world. Long-since swallowed by the insistent sea, little by little and then all at once, in a storm so great it decimated the very ground they might have rebuilt on. A shadow of Dario's life was still there, a heat-haze of childhood memories buried in sand and rubble and water.

The water, the water, the water. His aunt used to say, *It giveth and it taketh away*, but Dario had hated that. It spoke to an undulation where he'd only experienced an escalation. It implied a reciprocity that he didn't think had been present for a very, very long time before the end.

"I think it's some type of crown," Zinnia said. "If you cut a crown, and unwrapped it, like. You know?"

"Nah, I think it's supposed to be mountains," Vin said. "See all the pointy parts? And the wavy bits, that's, like, where the rivers come down in between. You see it?"

Dario didn't correct them. He didn't want to explain, didn't want to verbalize what he was feeling just yet. He wasn't crying, but now he looked at the old woman in front of them, and thought he saw the echoes of his own family in her grief-stricken face. His grandmother had always kept her composure, at least in front of the kids. He wondered if this is what she might have looked like, in the absence of her family's confining, bracing weight.

He didn't know how long they watched. Long enough that Zinnia started messaging with a friend, on one side of him. Long enough that Vin got distracted feeding little bits of potato to the ants, on the other side of him. But Dario watched, and watched, and watched. Under Yeong-cheol's hands, the world was recreated. Dario could feel the echo of mud under his own fingernails—he'd been young enough that digging through rubble was a treasure hunt on par with catching crabs, the thrill of discovery muddled in with a baseline horror not quite over his head.

Toward the end—Dario knew it was the end, could sense the completeness of it—the old man took a sharp stick. Across the bottom, he carved the words *Accensa Domo Proximi*.

“Oooh,” Zinnia said beside him, typing furiously with her thumbs. “OK, OK. I'm on Grapevine, and people are posting that it's a map or something. And that would be Latin, right? Did either of you take Latin in school?”

Dario ignored her, and found himself moving through the crowd, to the very front. There was no barrier separating the artist and the assembled, the work from its watchers. He simply stepped through the people, across the short empty space they'd left by popular consensus, and found himself inches from the enormous clay representation.

Slowly, carefully, he reached out. Dario rolled the pad of his thumb over the spot where Halstead Bayou used to be, leaving behind a faint ridged whorl. Then he stepped back, all too aware of the escalating volume of the crowd and the number of cameras that were now pointed at him.

He met Yeong-cheol's eyes, not knowing what to expect. But there was understanding there, and he came over to inspect the small mark Dario had made. “This is good, I think,” he said, speaking for the first time. His English had a very slight British accent to it. “Ocean Springs?”

“Yes,” Dario said, still unsure. His thoughts were starting to catch up to him: *You touched it. One of the greatest*

living artists, Zinnia said! What are you doing? How could you—

“I’m from the coast, too,” Yeong-cheol said, nodding. “An island that is no more. I’ve done several versions of it, by now. The best one is on exhibit in Seoul. This is my first attempt at your home, however. How do you think I did?”

“I recognize it,” Dario managed. He hadn’t called it home in a long time. “All of it.”

For some reason, that made the old man smile. “Good. I’m leaving it here, you know. A permanent installation, once it is properly fired. You can come visit whenever you want.” He pointed to the thumbprint, and said, “This, in particular, will make it memorable. I think we keep it, don’t you?”

Dario nodded. He would have nodded no matter what Yeong-Cheol said, but now he felt an odd sort of relief bloom in his chest. He met the man’s eyes again, and saw that same understanding even as his own thoughts came disjointed. *What it’s like. When the death of your home is someone else’s lesson learned.* That was by far the most grating thing about this city, for all its solar panels and biodegradable takeout boxes. He’d never been to a single memorial, even though they held them every year. A few speeches couldn’t hold the depths of the loss between their meager words, couldn’t scrape together the brokenness that had wracked that land long before the saltwater, and he’d always been uninterested in listening to people flail as they tried to do it justice aloud.

This, though? All the maps he’d ever seen had been oriented north-south, with these places on the periphery. But this representation arranged it the other way, as if the ground beneath it was the main of the continent, the features emerging up into the air at eye-level as the focus.

Dario stepped back, and back again, and suddenly Zinnia and Vin were at his side. A quick glance at their resolve told him that they might not understand what was going on, but they were ready to back him up anyways. The

flowers of relief under his skin pulled at him, turned towards the warmth of their affection.

Yeong-Cheol addressed the crowd, even as he dipped his hands into a new bucket and came out with a white, viscous substance. “*Accensa domo proximi, tua quoque periclitatur*,” he said, as he began to gently coat the statue. “It’s unattributed, but a powerful line. When the house of your neighbor burns, your own home is likewise in danger. A millennia-old phrase, passed down through generations. And yet not something our collective human society managed to internalize, at least in certain arenas, until recently. So now, I show you: It burns.”

He produced a lighter—an old-fashioned one, that clicked as he sparked it to life. Then, he touched it to the corner of the statue, and the white liquid caught, turning flame-blue.

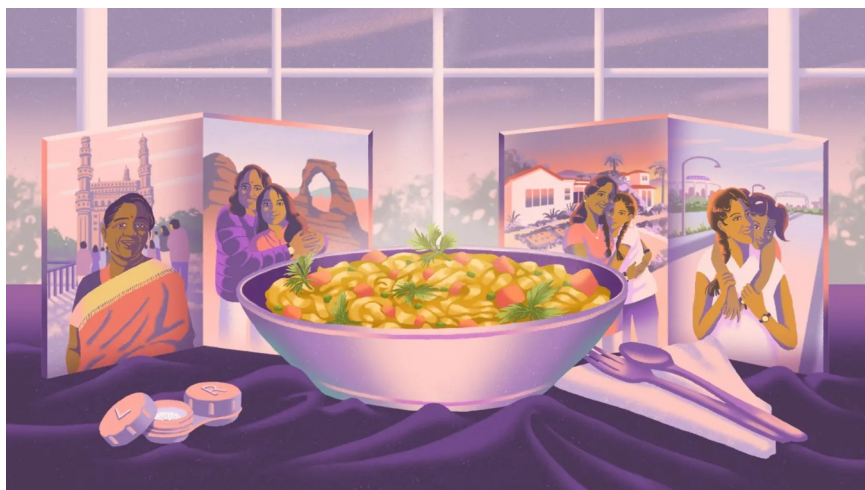
Some people cried out, and most everyone stepped back from the sudden heat of it. But Dario stayed put, and closed his eyes. He felt the warmth on his face, on his bare arms. His friends pressed up against him on either side, but they didn’t retreat.

The moment lasted for a long, long time. When he finally opened his eyes, the structure before him still glowed blue.

“The firing,” Zinnia said, unusually subdued beside him. “It’ll go on for the better part of the night. You want to stay and watch?” Dario thought about it. He rubbed the barest bit of clay residue between his thumb and forefinger, and took in the feeling of it, paired with the feeling of being among this crowd. Watching the sculpture with all of them felt a little like it wasn’t just *his*, like they were carrying this together. “Yeah,” he said, and finally retreated to a more comfortable distance. He sat, and his friends joined him. “Yeah, I think I do.”

Cameron Nell Ishee (she/her) is a writer and research program administrator most recently from Vermont, whose roots include the Mississippi Gulf Coast. This is the first time her work has been published, and she celebrated with chilaquiles (the best breakfast food).

Stefan Grosse Halbuer is a digital artist from Münster, Germany. In over 10 years of freelancing, he worked for brands like Adidas, Need for Speed, Samsung, Star Wars, Sony, and Universal Music, as well as for magazines, NGOs, and startups. Stefan's art is known for a love for details, storytelling, and vibrant colors, and has been exhibited and published all around the globe. Recently, he released his first solo book, "Lines," a coloring book with a selection of his art from the last years.



Chapter Seven

***Cabbage Koora:
A Prognostic Autobiography***

Across generations and a changing world, an Indian family preserves its traditions through food, dance, and the latest communication fads.

Author: Sanjana Sekhar

Illustrator: Mikyung Lee

Thursday, February 9, 2023

I'm bundled in a wool overcoat against the 6 a.m. winter chill of Los Angeles. The former New Yorker in me scoffs at how soft I've become against the cold—or rather, the “cold,” since it's a full 50 degrees and I'm shivering. Today's high is 80, so by noon I'll have stripped down to a crop top. I know it's climate change and all, but I'd be lying if I said I'm

not just a tiny bit excited for a short reprieve from the monotonous months of 50-degrees-and-rainy that we've been having this winter.

The morning frost on my Subaru is tenacious, even after I run the engine for a little while. I'm bordering on late for kathak class, so I pull out of the driveway with icy windows and hurry to beat the rush hour traffic.

In the studio it's a steady thrum of the *tabla* over the stereo system:

tha ki ta tha ki ta — gin na

tha ki ta tha ki ta — gin na

tha ki ta tha ki ta — gin na — dha

gin na — dha

gin na — dha

And then a relentlessly driving pace of *chakkar*, or one-count spins:

tig da dig dig ek...

do...

teen...

chaar...

paanch...

chhe...

saath...

And on and on...

After an hour of this, I'm breathless. We've been drilling a composition with 31 *chakkar*, and even after months, I'm losing my balance somewhere around 26.

I leave class and head back to my car, protein shake in hand, sweat gluing my *kurta* to my skin, a string of profanities running through my mind as I scold myself for tapping out at 26. I've just slipped into my driver's seat when my phone rings. One peek at the screen and my mood elevates.

"Hi Amma," I say with unrestrained fondness as my mother's face grins back at me over FaceTime.

“Hi *chinna*,” she responds with equal affection. “Just finished kathak?”

“Yeah, about to head to the grocery store on my way home.”

“Shall we quickly call Ammamma before she sleeps?”

“Sure, my parking meter’s out in 10, though.”

“We can just say hi. FaceTime or Whatsapp?”

“FaceTime. Can you add her in?”

“One minute.”

After some shuffling around, a second little box populates on my screen, offering me the stray wisps of white hair otherwise known as the top of my grandmother’s head.

“Hi Ammamma,” I say.

“Hi Amma,” my mom chirps.

“Hi *kanna*. *Bujie kanna re*. Sweetie *kanna*,” croons my ammamma’s forehead. “How are you both?”

“Good, can you bring the phone down?” I say, holding back a laugh. “We only see the top of your head.”

Amma and I call Ammamma together every week. It used to be Sundays, like clockwork, when I was in grade school. Now it’s sort of whenever we catch each other. Every week we remind her to tilt the phone down so we can actually see her face. And every week she insists on greeting us with her forehead.

Ammamma’s pattering around her kitchen in Hyderabad, 8,711 miles away from me in California. My memory conjures up the smell of hearty *palakurrapappu* and fluffy *idli*. Chili-spiced tur dal roasting on the *tava* for homemade *podu*. The softness of her orange sari, *pallu* tied securely around her waist so it stays out of the way of her busy hands.

She’s lived alone in Tarnaka for almost 40 years, ever since my grandfather passed away. She’s 85 now and wobbles about her small flat with the vigor and determined independence of a 20-year-old. My amma got this from her, I think. I swear my amma will be single-handedly shoveling

piles of snow as tall as she is (five whole feet) from her Park City, Utah, driveway until she's 90 years old.

I tell Ammamma about kathak class and she glows with pride. "Very good, *kanna*, Very good. I'm very glad you're keeping up with kathak. Very good."

"I'll show you this new composition when I next come, Ammamma." She smiles the most when I promise this. Every year, when we visit her in India, I dance for her. In those 15 minutes while she watches, she's filled with more childlike joy, more wonder, more freedom of spirit, than any other moment I see her. My grandma, like many women in her generation, carries a deep anxiety. Kathak transcends that, transports us together, unlocks her. Dance is hardly my profession, but it has a cemented place in my life as a psychosomatic way to stay rooted in culture and family, from half a world away. As a way of staying connected to Ammamma.

"*Aim chestunavu*, Amma? What are you doing?" my mom asks her mother.

"*Aim ledu*. Just putting away the food."

"What did you make for dinner?"

"Nothing much," Ammamma says. "Some *pappannam*, that is all. Tomorrow I'll make some cabbage *koora*." She pauses in her puttering to pick something up off the counter. "See? Do you see the cabbage?"

Ammamma adjusts the angle of the camera in an effort to show us her cabbage.

"Do you see?" But she's pointing the camera at her ceiling, and I'm having a hard time repressing my laughter.

"No, Ammamma, we can't see. You're showing us the ceiling."

Ammamma adjusts the angle again, and now we're feasting our eyes on a sliver of her ceiling that's been joined by a section of her wall.

"Now? Now do you see? Do you see the cabbage?"

Amma is openly laughing. “No, Ma, we don’t see the cabbage. You’re showing the wall.”

Another unsuccessful adjustment, then: “OK, now? Now do you see the cabbage? Do you see the cabbage?”

Ammamma’s excitement is only intensifying, but no appearance from any cabbage thus far. Now Amma and I are both shaking with mirth.

“Do you see it?” Ammamma continues to insist.

We don’t answer, because we’re too busy gasping for breath. Then, miraculously, we see a sliver of a blurry green leaf flash across her FaceTime camera.

“Oh!” Amma and I both shout.

“We see it, Ammamma!”

“Yes, yes, we see it, Ma.”

“You see the cabbage? You see it?”

“Yes! Yes, Ammamma, we see the cabbage!”

Now even Ammamma is laughing.

I screenshot this moment several times, never wanting to forget these small winks of diasporic joy, the three of us spread across three cities and three generations, giggling like sisters together on a sunshine summer afternoon.

It’s not long before Ammamma’s chuckles turn into coughs, peppered by a sort of rough wheezing that I learned as a child is part of her chronic asthma. My parking meter blinks red.

Tuesday, November 19, 2047

I’m in the front yard, doling out carefully measured sprinkles of water to the small garden I’ve struggled to nurture for the last several growing seasons. The water rations for victory gardens have gotten more and more economical over the last 10 years. In our little patch we still get tomatoes and kale and grow some neem, and the occasional surprise potatoes spring out from wherever we’ve last dug in compost.

The rest of our food comes from the community garden (which does better some years than others), the local

co-op (which is not always well-stocked because it hasn't quite yet reached financial stability), or with great burden to our wallets (anything requiring long-distance freight costs an arm and a leg now, partially because it's just too expensive at a basic resource and carbon level, and partially because of the taxes they've been trying to institute on non-local food).

It's been a tough transition period. Here in California, we have the farming infrastructure but not the water. In other parts of the country, land that's been monocropped under generations of agribusiness is in various stages of transition to regenerative farming. The question of who pays for this transition, what carbon taxes get charged or credited and to whom, and who leads the proposed solutions that take the place of the old order ... well, it's been a thorny time. But it's also a time of inspired experimentation. I remind myself of that when the overwhelm hits. I remind myself of the energy:

Where we live, in the historically Black neighborhood of Leimert Park, our family's borne witness and supported as those who've been holding it down here for generations lead the charge on collective care. Community gardens, co-ops, free fridges, heat shelters, communal front-yard victory gardens, shade-tree planting, seed saving, after-school programs, "Buy Nothing" gift economy groups, car shares, and so much more.

Funding is a constant issue for these initiatives (right now the biggest source of funding is private donors, but the community is keenly problem-solving for a self-sufficient model). Everything's decided at our monthly town hall meetings, which are always lively and full of opinions. There's a small group of us South Asians in the neighborhood, and our agreed-upon job at these meetings is mostly to listen well and provide the chai.

Out in the garden, dusk is dancing vividly before me, blues chasing pinks chasing oranges across the hazy horizon. I always stop to cherish it, never knowing how many more I'll savor before the smog swallows up color altogether.

I pause over the far end of the garden, which has been exceptionally dry no matter how much I try to feed it. It's honestly a little embarrassing. My neighbors' victory gardens look far more luscious than mine. The community decided at one of our first meetings years ago that victory gardens would go in the front yard (communal, conversational, open, and engaging) rather than in the backyard (hidden, private, inaccessible). 99 percent of the time, I love that we made this decision. The 1 percent is just the occasional despair I feel when I remember that my garden is on display and not in the best shape, and my ego gets to me. I make a mental note to hop next door tomorrow to Amrit and Hari's to ask Hari what cover crops are working in his yard these days—his green thumb has always guided mine, and maybe he'll know how to better nourish this dry patch.

From somewhere inside the house, my phone rings. "Amma!" Gita's voice calls to me. "It's Ammamma." Her 5-foot frame, identical to mine, comes bounding through the open screen door, my phone in her hand.

Gita's hair is curly like mine, and I fucking love that about her. She's smart as a whip, and I love that even more about her. Sometimes I look at her and marvel at the fact that I *made* that creature. Now I understand what my amma's always saying about "having a kid is like putting your heart outside of yourself and watching it walk around," or some shit like that. Sometimes I want to gather Gita up and store her safely back inside my body.

She comes over to me and scoops me into an affectionate hug before setting the phone up flat on the porch table and hitting "answer." We both activate the bracelets on our wrists. Almost immediately a spark of light projects upwards from the Beam projection port on my phone, and a three-dimensional hologram of my mother takes shape from the light.

"Hi Amma," I say.

"Hi Ammamma!" Gita says brightly.

“Hello? Hello?” my mom says. “I can’t see you.”

No matter how many times we do this, she always comes in perplexed at the beginning of a Beam call.

“Amma, did you put it face down on the table again?”

“*Allari pilla!* Troublemaker. I kept it properly face up, I’m not that technologically challenged. But still I don’t see you?”

“Did you turn the brightness back up or is it in night mode?”

“Oh. One minute. How do I do that again?”

“There’s a control on your bracelet. This is why I was saying you should just leave it on the automatic setting.”

“I can figure it out. I don’t like how bright it is on auto, it makes my eyes burn.”

We watch her hologram-self fidget with something off-camera, before lighting up in delight.

“Got it!” she says. “Hi! Oh, Gita, you’re looking so nice. Are you going somewhere?”

“Thanks, Ammamma,” Gita says. “I was invited to a prayer circle tonight, in preparation for the burns next week. Elena is leading, and she told me I could bring some jasmine and *haldi* and *chandana* as offerings from our family.”

For the past few years, Gita’s been volunteering with the Tongva Conservancy’s ceremonial burns, covering any responsibilities she’s invited to participate in. Fire season has worsened over the last 10 years in California, so many regions, including L.A. County, realized survival depended on working with local tribes to revive cultural burning practices. The prescribed burns that Indigenous folks across the world have practiced culturally since time immemorial kept rampant dry brush under control and created a cycle of nourishment for the forests, until colonialism outlawed the practice. In L.A., the late fall burning they’ve restarted allows for plant life to rejuvenate in the rainy winter season, the goal being to once again transform dry underbrush into verdant vegetation come spring.

“How are you going there?” my amma asks Gita. “I thought your driving permits are Monday, Wednesday, Saturday?”

“Elena got a Tuesday slot in the community car share, so she’s coming to pick me up. I think she got one of those Rivian two-doors!”

“Fancy,” I say.

Gita goes inside to start gathering her things while I ask Amma what she’s up to.

“Not much,” Amma replies. “Just making your Ammamma’s cabbage *koora*.”

“Tease!” I accuse.

“I sent you seeds last year!” Amma says defensively.

“Yeah, yeah, but they don’t grow, I told you. The water they need is way beyond our rations.”

We bicker warmly about cabbage *koora*—a nostalgic but water-intensive vegetable I probably haven’t eaten in 15 years at this point. As the cool night air sets in, Amma’s hologram shines brightly above the porch table. A few stray moths, confused, start circling in the vicinity. I watch their wings disturb the pixels here and there.

When Elena’s car (indeed a Rivian two-door) pulls up, Gita flashes by me with a kiss and hops in, leaving the divine aroma of jasmine and *chandan* in her wake. At the same moment, a second set of footsteps tip-tap up the stairs from the street into our garden, and I’m engulfed in a familiar embrace.

“Hi buddy!” a voice coos at me. It’s Aditi, close friend and co-conspirator. She plops her bike helmet and backpack onto a chair on our porch. Seeing that my mom’s on Beam on the table, she grins. “Hi Auntie!” She hits the “join” button on her Beam bracelet so that my mom can see her hologram, then sprawls out in the grass beside me. “How are you?”

“Hi, Aditi! Good, good. How are you, how’s Noor?”

“They’re good, they’re still at the courthouse, or they would’ve come by with me.” Then Aditi nods at her backpack

and looks at me conspiratorially. “I went to the Indian store today.”

I let out a whoop. This is a luxury we reserve only for special occasions. “Shut up. What’re we celebrating?”

“Wellll, Noor Beamed me from the courthouse today and told me that our permit request for the collective is next in line for consideration. And that they think we’re a sure thing.”

Amma’s hologram gasps. “The housing collective?”

“The one and only!” Aditi says.

That night, with Amma still on Beam, Aditi pulls out fresh guavas and late-season mangoes, a rare pleasure all the way from the subcontinent, and we twirl around...

tha ki ta tha ki ta — gin na

tha ki ta tha ki ta — gin na

...between bites of home.

Friday, July 9, 2077

I eye the box on my coffee table with suspicion. Gita’s had some strange contraption called *Iris* delivered to me, and she swears it’s worth whatever trouble it surely brings. I asked Aditi and Noor about it, and they agreed that the concept of sticking digital contact lenses in one’s eyes is unpleasant, to say the least. Gita instructed me to be open to it and threatened to call me an old codger if I refuse to even try it out.

“Iris makes your eye a projector, Amma, your *eye*. Can you believe it? It’ll be like Reyna and I are there with you, 3D, walking and talking and interacting with you and your space. Like we’re literally *there*,” she’d said when we last talked.

The idea of feeling like my daughter and granddaughter are physically with me ultimately makes Iris an easy sell, despite my hesitations. Remembering her words, I decide to open the damn box.

After great difficulty and no small amount of grumbling, I've finally affixed the small translucent contacts to my eyes, and, scrutinizing the user manual, I figure out how to power on this incredibly invasive piece of technology. I've had it on for less than two minutes when the accompanying earbud headphones inform me that I have an incoming call. It is, of course, Gita.

"Amma!" she shouts joyfully. "You did it! You finally listened to me! This is *so cool*."

I'm not sure exactly *what* is so cool, as my vision is blurry and I'm completely baffled by how she could possibly be seeing me right now. But I take her word for it. Gita does some troubleshooting that I don't understand, laughs at me quite a few times for being a bumbling fool with this new device, and finally coaches me through getting the focus in the lenses calibrated.

And then I see what's so cool. Gita has set it so that the simulated world we're in is my real front yard. I'm really here, right here, right now, lying in the grass. And it looks like they're here, too, as full-scale renderings of their real selves. They can interact with me, with my garden. On their end, Gita tells me, it's like being in virtual reality. She tells me that next time, we'll make the setting her house, where she and Reyna can move around in the real world and I'll be visiting via virtual reality. Once I've quit my grumbings, we settle into our regular pattern of conversation—what we're all eating, how everyone's love interests are, whether we're taking care of our health — except it *is* quite cool, because the whole time it's like Gita and Reyna are lounging in the yard with me. I tell them this reminds me of way back when I was a kid in India, loitering outside all afternoon with my cousins.

"You used to go to India *every year*, Ammamma?" Reyna asks me, eyes wide.

"Every year. We were very lucky."

"Do you think you'll ever go back?"

“With the flight restrictions, it’s almost impossible,” I say. “Now I think it’d take me three trains and a whole-ass ship. No, I don’t think I’ll ever be able to go back. But sometime in the future ... I think you will.”

My girls both reach out to me as glittering pixels in the golden summer afternoon. I like how realistically Iris portrays them, truly as if they’re here in the grass with me, just like Gita promised, reaching towards me to comfort me. But the technology misses what I love most about them: their smell, the warmth of their skin, the calm in my own heart when I’m in their physical presence.

When Gita told me she and her partner Gloria had decided to move away from L.A. to raise Reyna somewhere that was more climate-stable, I understood. My mother left her mother in India to come to America in search of a better life, an economically stable life, a life that would offer the opportunity of abundance for us—for me—after the literal and metaphorical scarcity that British colonialism imposed on the subcontinent. At the time, who would’ve thought that decades later, rampant consumption and capitalism would finally deliver that same scarcity here to our doorsteps in America?

Then I moved away from my mother, starting a life in L.A. in community with other South Asian storytellers who were committed to drawing attention to climate and culture. Those of us who’d joined the movement as soon as we became conscious of it saw the writing on the wall long back, but it took the bubble actually popping around the wealthy for those in power to take any real action on what was going on.

In L.A., most of the mansions in the hills got wiped out by fires long ago. A staccato of winter storms caused irreparable mudslides along Mulholland Drive. The Pacific Ocean claimed Santa Monica. The city was forced to implement retreat strategies, which led to them regulating lot sizes as more people had to relocate to the livable areas of L.A. Predictably, some millionaires really fought against this

and did everything they could to rebuild their mansions and add “climate-protective measures,” but no one ever got too far in the process because insurance companies no longer cover houses built in long-designated Hazard Zones, and after a certain point with all the carbon taxes levied on any building project that exceeds Reciprocal Resourcing Standards, the mansions were no longer financially viable. Other millionaires were shockingly supportive of the lot size restrictions, and wound up working within Reciprocal Resourcing Standards to build sustainable collectives.

Of course, some people still went the route of save-myself-at-the-expense-of-others. They built bunkers with the goal of “self-sufficiency.” It’s a seductive idea, until you realize what it means is isolation from any sense of community. We are by definition interdependent. Our survival is predicated on our ability to work together. But I’m pretty sure Elon Musk’s kids are still raising their families all alone in their secluded fortress. Their only outside interaction is probably with the drones that deliver their caviar.

Ultimately, it was the local resilience, the grassroots ideas, the place-based knowledge that allowed us to survive. These days, I live at Auntie Gang Collective (the name was inspired by Gita always calling me and my cherished group of South Asian women friends “auntie gang”). Here, there’s no caviar (never understood the appeal, anyway), but there’s music in the streets every day.

tha ki ta tha ki ta — gin na

After weathering a long waitlist at the permitting office, our little collective of 15 homes was finally greenlit and built with reclaimed and organic material as part of a government-sponsored hyper-localization effort. Over the last 30 years, L.A. was essentially renovated and rewilded by a team of what we would’ve called environmental architects back when I was growing up (today we just call them “architects”), led by a group of Indigenous engineers and designers.

We can't drive much anymore (even electric cars, which over time proved to be too resource-intensive to continue manufacturing at scale), but it's OK, because the electric buses and trains are much more connected than they used to be. Plus, Aditi and Noor are original Auntie Gang members and live just down the street. We hobble over to each other's houses almost every day.

"OK, so India's off the table," Gita says, cutting off my thoughts, "but more realistically, can you come *here*, Amma? I told you, Gloria and I can arrange for the flight permits—we have so many credits from volunteer days with the ceremonial burning crews. The auntie gang can help you pack up, and you can be here by next week."

I make a face at her. I hope with Iris that she can properly see the extent of my disdain for this idea.

"Not this again, *kanna*." I stick her with an exaggerated eye roll. "Every call, the same thing: 'Amma, now that Dad has passed what's left for you in L.A.? You're alllll alooone, why don't you leave everything you've known for the last 60 years and come here to fucking Duluth, Minnesota, to join us in this commune of white people.' *Chhi!*"

"Well, it was either this or Vermont," Gita quips back. "And it's not called Duluth anymore. It's Onigamiinsing—it's Ojibwe. Anyway, please just think about it."

"I'll think about it," I lie.

"You say that every time, but you never really do."

"And yet you keep asking."

"I worry about you."

"And I worry about you, *kanna*."

"About me? I have Glo and Reyna. I don't like you being alone over there, you're 82, and that's not young."

"OK, first of all, *rude*. Second of all, I'm not alone! I have Auntie Gang, all my friends within walking distance. The Collective has grown a *lot* since you last visited. It's like a

mini Wakanda here now. But with less beautiful superheroes and more elderly people.”

“Waka-what?”

“Never mind, it’s before your time. How’s kathak class, Reyna?” I change the subject swiftly.

“Oh. Good!” Reyna says. “We’re working on *chakkar*. I’m up to 31 in a row! I can Iris you from our studio next time and show you, Amamma. It’ll be like you’re watching me dance in person.”

The thought fills me with pride. With longing. With wonder at the fact that so many generations, so many geographic locations and climate-related disruptions later, we preserve this art purely because it makes us happy.

“That would be lovely, *kanna*.” I pause. “Actually, I wanted to show *you* something.” I take a few steps over to my left. “Can you see?”

“See what? You’ll have to be more specific, Amma,” Gita says.

I point. “OK, do you see this?” I’m gesturing to the front left corner of my garden, the dry section that insisted on following me from Leimert Park to Auntie Gang Co. The dry section where years ago I’d planted some cabbage seeds my mother had given me, though they’d never grown. The dry section that now was—

“I don’t see where you’re pointing, Amma,” Gita says.

“It must be out of scope. Let’s expand range on your Iris.”

I fidget with the control she directs me toward.

“OK, did it work?” I ask. “Can you see?”

Gita stifles a laugh and Reyna openly giggles. “No, Amma. I think you narrowed the scope.”

“Oh. What do you see?”

“Your foot.”

“Oops,” I say. I try again, but the touchy control is so minimalist that I can’t tell where on the range scale I am. “How about now? Now can you see it?”

“No, Ammamma,” Reyna laughs. “Now we see your left big toe. In *precise* detail.”

I mumble some R-rated expletives under my breath. “But I can see you. How am I supposed to know what you’re seeing? I told you I wouldn’t like this Iris thing.”

“OK, let’s stay calm,” Gita says, still chuckling. She talks me through the bewildering device and finally the formerly very dry patch of my garden is evidently in view, because—

“Is that *cabbage*?” Gita exclaims in shock.

“Yes!” I exclaim right back. “It’s *cabbage*! Cabbage!” I let out a loud hooray.

“OK, OK, we see it,” Gita laughs. “We see the cabbage.”

“Reyna, *choodu*! Look!” I say. “Baby cabbages!”

Reyna looks perplexed at my joy. “Very cool, Ammamma ...”

Personally, I don’t think either of them get the hype at all, so I try again. “These haven’t grown here since I was around your age, Gita. My ammamma used to make cabbage *koora* all the time. And to think Reyna’s never even seen one!”

“What? I see them all the time,” Reyna protests. “Amma made cabbage *koora* last week!”

“Yes, *kanna*,” I say, “but that’s that hydroponic shit you people grow over there. The real stuff is grown in the *dirt*. Real soil. Real food.”

“OK, Amma, let’s not get into this again,” Gita says, clearly miffed. “Hydroponics have fed a *lot* of people over the last 50 years. But I’m very happy for you about your cabbages. You can Iris us once they ripen, and we can make cabbage *koora* together. Reyna and I with our ‘hydroponic shit’ and you with your ‘of-the-dirt’ stuff.”

We dream for a while together about cabbage *koora*, until Gita declares that it’s bedtime for them over on Ojibwe Land.

I disconnect from Iris and allow the shimmering afternoon to envelop me. I slip my shoes off and dig my feet into moist soil. I feel my pulse.

tha ki ta tha ki ta — gin na

tha ki ta tha ki ta — gin na

My back hurts more often these days, and the asthma's been back for nearly 20 years (one can't blame my lungs—they put up a heroic fight against nearly half a century of summer wildfire smoke). I've had my share of cancer scares, too, like the rest of us.

tha ki ta tha ki ta—gin na

I think of the two generations before me, who saw the world change so much in their own lifetimes: my amamma watching India gain independence from the British Raj, and my amma, moving to a completely different continent and building a new life from scratch.

I think of the two generations after me: Gita, who didn't see stars for the first three decades of her life until regulations helped clear the smog. Reyna, who's never seen the snow but can do 31 *chakkars* and accompanies her mom to volunteer for ceremonial burn support.

tha ki ta tha ki ta—gin na

I think of the descendants that follow, from whom I borrow this earth.

And in the cabbage patch, loam between my toes,

tha ki ta tha ki ta—gin na—dha.

—gin na—dha.

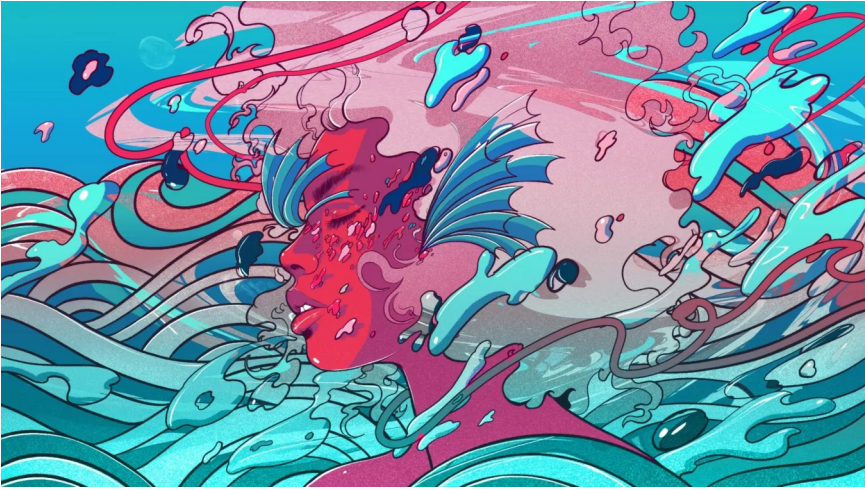
—gin na—dha.

I dance.

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Chapter Eight

La Sirène

On a submarine housing children born with a genetic mutation, people of faith wrestle with the sin of causing an ecological disaster.

Author: Karen Engelsen

Illustrator: Carolina Rodriguez Fuenmayor

An alarm buzzed, yanking Benny's gaze away from his bank of video feeds from the underwater observation drones.

Someone's left a baby in the Safe Haven Box.

Torn, his attention wavered. Two of the drones still floated freely, not yet stowed safely beneath the Mission—and a hurricane loomed mere miles off Old Louisiana's coast.

Hurricane's not quite made landfall. That baby is more important than docking drones.

Rising winds lent him urgency. Benny keyed in the auto-dock on drone #18 and sprinted down the hall. For the most part, ballast kept the Kateri Mission floating steady, her sea anchors holding her in place. But storm surge was already hitting her broadside in waves. It wouldn't be long before it drove them beneath the surface of Timbalier Bay for safety.

Lazare, as usual, beat him to the receiving chamber. He shifted impatiently from hand to hand, waiting for Benny to open the box and retrieve the surrendered infant.

"How the heck do you run so fast?" Benny glanced down. The kid wasn't wearing his leg prosthetics. *Again.*

"How do you run so slow, old man?" The boy shot back, grinning as he plumped his torso on the floor and crossed his arms.

Not a boy—a young man of 16. But a young man who will never have an adolescent growth spurt. His body will always be too small for that big personality.

The thought saddened him.

Benny knuckled Lazare's head. "Hey—I'm only nine years older than you."

Between seminary and engineering at the Mission, "Deacon Benoit Naquin" feels like he's 100 already. Just wait 'til I make the Priesthood. He laughed at himself.

I'd do anything for kids like Lazare.

Hydraulics groaned as the Box's exterior door finished sealing. Outside the Mission, rising winds made their supply airship's docking mast vibrate. Its thin wail pierced the foam-concrete walls.

Uh-oh. Winds have reached Category 1, over 74 miles an hour.

Uneasy at the thought, he glanced out the window. Water churned against the plexiglass: dirty water in Nature's

washing machine, debris flying sideways, white foam lashing clear to the second floor.

“I saw no sign of a boat when I got here.” Lazare, too, sounded worried.

Benny spared a small prayer for the infant’s mother. He couldn’t imagine how someone from the bayous crossed the open waters paddling a pirogue. Not in this *ouragan*.

The sound of hydraulics ceased, and the indicator light blinked green. Benny thumbed the lock, and the Box door released. Water dripped through the hinge, moisture darkening the wall as it opened.

Inside the compartment lay a small bundle, swaddled in a wet blanket.

“Someone got you here safe and sound. Let’s see who the storm brought us, then.” He cooed as he reached for the crying infant and peeled down the wet swaddling.

A full head of dark hair crowned the infant. A starfish hand waved fitfully in midair. Benny slid his finger into its grasp, touching the palm. Like the tendrils of coral anemones, tiny fingers wrapped around his finger.

The child huffed and settled.

“Let’s see who the storm brought us, then.”

Perfect little torso, perfect chubby arms, the fine thread of a pulse tangible to his touch. But below the navel, what should have been two legs tapered into a single, narrow column ending in twisted flipper-like feet.

And also the wide-set eyes, broad nasal bridge, and epicanthic folds of Potter’s Syndrome. *Another sirenomeliac, poor little thing. Another victim of oil’s heavy metals. It’s poisoned our waters since the Time of Hungry Ghosts.*

“You’ve got a sweet little sister,” Benny said.

“What is she — my 30-second sibling now?” Lazare scoffed as he scuttled over to see, his empty shorts dangling under his half-body.

“Settle down, and you can hold her while I lock up.” Benny slipped her into the kid’s eager arms. Once the Box sealed shut, the ballast pumps could engage, pulling the Mission underwater, safely beneath the gale.

Lazare drew a finger down the girl’s fused legs, to her twisted flipper feet. “Just like me,” he said, his tone wistful.

Like so many, born without viable kidneys, unable to survive without the Mission’s care. Always needing life support, never to live lives of purpose. We’ve saved them, but is that enough?

Benny straightened. The girl needed surgery to integrate her with a life support unit. *Thank Bon Dieu the Church has deep pockets. And a guilty conscience.*

A loud crash shook the chamber. Shock shot through Benny’s veins like hot whiskey. His gaze flew to the source of the sound.

A large, gutted fish battered against the plexiglass window, water churning ever higher as the storm strengthened. His heart skipped a beat in his chest.

“A busted observation drone,” he said. *One I didn’t stow away. Number 19 or 20.*

Modeled after a yellowfin tuna, its fish-shaped silicone exterior had ripped wide open, exposing a disjointed carbon-fiber spine inside. Electropolymer muscles had torn loose, dangling freely in the water. The head carrying sensory electronics dangled by a wire, banging against the window with the motion of the waves.

“La Sirène is not happy with us,” Lazare said. “She’s throwing our fish back in our faces.”

La Sirène. Mami Wata. Blessed Mary, Star of the Sea. She of many names, many faces: the lighthouse that guards, the guiding star that brings a sailor home through storm—or kidnapper of babies to raise them undersea, the mermaid that drowns men in her embrace.

The pitch of the wind rose, the Mission's sensor mast vibrating with the harmonics, an eerie, tonal wailing. They'd have to withdraw beneath the surface soon. Without sun, batteries would see them through the worst of the storm, but if the winds kept them under the surface more than two days, they'd have to ration power.

"La Sirène calls to us," Benny said. *With the most beautiful voice of all the loa.*

He sighed, torn between two worlds, and shook off his frustration. "I'd best get her to surgery."

Lazare looked up. "What should we name her?"

Benny spared a last glance at the wreckage of the drone. Electronics gone, its gutted silicone body thrashed against the window, storm surge lending it the semblance of life.

"Nola," he replied. "After the city that drowned a hundred years ago. New Orleans."

"Nola." Lazare nodded his approval as Benny took the child from him. "Stormborn."

Benny studied the small, still form in the regen-tank.

The charge nurse, Sister Cecely Couteau—*Cece*—wiped sweat from her hairline with a forearm. "Surgery went well," she said. Cat-like satisfaction stole across her face.

Nola's tiny body hung suspended in the tank, supported by an inflatable, petal-like float that kept her face above the straw-colored fluid. The bottom of her torso ended

in a neatly bandaged bulb, connected to the life-support unit via flexible tubing and wire cables.

“ Little froggy on a lily pad,” Lazare chanted, his nose pressed to the glass.

Nola’s arms twitched.

Benny glanced up sharply.

Cece read the monitors as she gestured to the baby. “EEG shows the electro-stim is working. You can see the neural link has stabilized.”

“Good.” The stim would keep her muscles from a state of atrophy.

Benny relaxed too-tight shoulders and exhaled a long sigh of relief.

Waiting in surgery always leaves me such a mess.

Named after the Patron Saint of Ecology, the Kateri Mission’s initial purpose was coastal wetlands restoration — a task which came to mean salvaging the lives of sirenomeliacs as well, lives that otherwise would be lost.

But that isn’t always easy, or even possible.

As Benny watched Nola sleep, his old anger bubbled up. *Children wouldn’t suffer like this if Mother Church hadn’t spent two millennia promoting ecocide in the name of dominion over the earth. It’s taken her too damn long to come to her senses.*

His feelings must have shown on his face. Cece patted his hand. “We won this one. Take the win, Benny. She’s not going anywhere.” She gently guided him toward the rocker in the corner of the recovery room. “How long has it been since you slept? By the look of you, not since God wore knickers. Get some shut-eye.”

“I’ll watch her for you,” Lazare said. His fingers made the sign of the cross, lips moving with his own silent prayers.

He sees himself in babies like Nola. They make him less lonely.

“Come get me if anything changes.” Benny said. He eased back against the worn cushions, letting the bubbling sounds of the tank soothe him as he halfheartedly rocked.

He rested tired eyes on the many invocational banners hung on the walls. Their brightly colored satins, sequins, and glass beads depicted guardian Saints and Vodou healing spirits. Saint Patrick/Damballah the Rainbow Serpent, Saint Claire/Ayizan the purifier, an old woman in white and surrounded by palm trees—each one an emanation of *Bon Dieu*, the good God.

Cece had even drawn a vèvè—a Vodou religious symbol—on Nola’s tank with a white marker. The curlicue lines, stars, and two snakes facing each other invoked the protection of Saint Patrick/Damballah.

She’d also cleaned away bad energy with Florida Water. Its pungent, limey scent bit the back of Benny’s nose. Beside him, on an altar, candles flickered at the feet of a sculpture of Mary, Star of the Sea. Bowls of roses at her feet emitted a cloud of sweet perfume.

Phrases of her votive mass washed through the back of Benny’s mind.

... Mary, shine forth as the Star of the Sea and protectress for us who are tossed about on the stormy waves
...

The sacred memory soothed him. For the first time in what felt like days, Benny closed his eyes, merely listening. No wailing skies. Only the faint pulse of the pumps felt through the soles of his feet—the Mission’s heartbeat.

Benny let himself drift. He’d had a tough day punctuated by frantic rushing, then the long, tense wait as the storm raged overhead.

The smell of rose grew thicker, sweeter. The soft cloud of scent reminded him of the Mary shrine back home in Houma City.

“You did well bringing her here.”

Cece’s voice—or is it? Benny drifted too deeply to care. He felt her gentle hand on his shoulder, and raised his own to cover it.

“But you need to let them come to me.” Fingers dug into his shoulder.

His eyelids felt as if they’d been glued shut. Benny struggled to open them, to see who pinched him.

“The world is not your plaything, to be used and discarded at whim.”

A face blurred before him: *Cece*? No—this woman’s café-au-lait skin was dappled with fine traces of scales, her body nude to the waist. And below? An iridescent blue-green fish tail. It coiled beneath her like the body of a snake, lacework fins twitching as she balanced upright upon a bed of seagrass that waved beneath aquamarine waters.

“La Sirène ...” Benny murmured, not quite able to form a coherent thought.

How am I breathing underwater?

“I come to tell you, Benoit Naquin—” her words tumbled out in the patois of the deep bayou, the sound of water tumbling across a broken reef, “—that your little fake fish do not satisfy me. No hero can conquer me. No man alive has the power to control the sea.”

La Sirène undulated seductively, balancing atop her snake-like tail. “Your children will be mine, for I will take them back into my bosom.” Her grip released him, fingers snapping into a fist in front of his nose.

Benny jerked, tipping the rocker backwards.

He swung it forward again. “I won’t let your storms and tantrums imperil our children.”

Candles flickered, the flames growing higher, casting the sea floor with bars of light and darkness. Howling winds became the wail of an infant, forlorn, bereft.

La Sirène tossed her head in fury, dusky blond braids flying like sea wrack. “You are no savior, stopping up your ears, deaf to our cries,” she roared. “The world is not your plaything, to be used and discarded at whim. They suffer—” she flung out an arm, water splashing from her fingertips onto Nola’s tank, “—because of men like you. It is your arrogance that wounds them.”

She speaks truly. If only men listened, when the seabed wept oil, and the land begged for water. “What must I do?” Benny whispered, aghast.

Her gaze narrowed. “Suffer the children to come to me,” La Sirène replied. Tears glistened at the corners of her eyes. “Let me rock my babies in my waters. I will care for them, and they will become strong.”

Like a tempest swirling around the eye of the storm, her mood shifted. “If you do not give them to me, I will take them,” she thundered.

Benny’s head spun, the roaring of her voice overwhelming him. A terrifying vertigo threatened to pluck him from his body. He cried out as he pitched from the rocker, sprawling on the cold, concrete floor.

“Wake up, Benny.” Someone shook his shoulder. Benny heard the sound of water dripping. His shoulder was shaken harder.

“C’m on, dammit.”

It’s Cece. Cece calls me.

“Storm surge broke open a section of the oyster reef,” Cece said, her voice tight with worry. “You’ve gotta get an

ROV out there and repair it. Before salt water destroys the freshwater marsh.”

“It’s not that simple, Cece.” Benny had massaged his temples, trying to shake the last vestiges of dizziness. “Yes, a Remote Operated Vehicle *maybe* could tow out an artificial reef for oysters to grow on. But sediments have likely clogged the beds by now, choking them out. We’ll have to use the filter barge to clear the water so they *can* grow back and fix the reef.”

And that barge cannot be deployed until the storm dies down.

“Damn.” Her shoulders sagged. “Technology’s never been the answer, has it?”

Benny could only shake his head in agreement.

Back in his workshop, Benny showed Lazare how to read the satellite weather feeds, the kid all but wiggling out of the chair as he tried to concentrate. *So much energy. He should be doing something physical.*

He still couldn’t shake the conversation with Cece.

There should not be so many sick infants abandoned by their mothers. Or surviving kids like Lazare, tied to life support. A hundred-fifty years of environmental damage proved anthropocentrism leads only to destruction.

“We still haven’t learned our lesson, have we ...” Benny murmured as he studied the broken drone, now retrieved and lying on his workbench.

Observation drones were shaped like the fish they observed—but demanded a human operator to keep them safe. Filter barges—couldn’t work in current conditions. ROVs—too limited in range and motion to plant mangroves or tend oyster beds.

We’re still standing apart, applying our heroic measures to “fix” Nature. And it’s not working.

Frustrated, disgusted at his limitations, Benny began to pace.

“Lazare, what was that you said about La Sirène and fish when this showed up?”

“That she was throwing ours back in our faces. Why?” Lazare looked puzzled.

She doesn't want to be “managed” by drones. She wants mutuality. A co-equal relationship, man and sea. She even mentioned “her” babies—the sirenomeliacs?

As Benny fingered the drone's dangling electronics, Lazare hauled himself up onto the workbench, shifting position as he sat.

To avoid disturbing his bio-ports.

Benny looked down at the cabling in his hand, and back to Lazare. A clear image presented itself—the perfect solution, wedding a small person to a very mobile, low profile prosthetic, one able to work freely underwater.

His heart lifted, spirits buoyed as he sensed the possibilities.

It'll open the world to Lazare. Give him a real purpose, a job that only he can do.

And make La Sirène happy.

Father Superior Xavier de Charlevoix, head of the Kateri Mission, inspected the jury-rigged prosthetic taped to Lazare's torso.

Benny fingered his rosary. *Will he greenlight this project? Give the kids a real chance to make a difference?*

Lazare tweaked the manual controls. The drone's tail flopped back and forth behind him, mimicking the motions of a fish.

“You say this will enable him to swim?” Doubt wreathed Xavier’s careworn face.

“It should. But it will work far better once I mate the data module from the prosthetic—” *yes, call it that, not a “tail,”* “—to Lazare’s neural port.”

The Father closed his eyes, and scratched his forehead. Sighed. Jittered one foot.

“I can’t countenance this. *I want to.* But no.”

“Why?”

Father Xavier spread his hands. “Quite simply, Archbishop Raimondo will pull our funding. He’s already on the fence about supporting our work. Raimondo *still* refuses to acknowledge that contamination of air, land, and water are ecological *sins* that the Church has a responsibility to remediate.”

Shocked, Benny fumbled for words. “That’s a throwback to the Age of Hungry Ghosts, isn’t it? Back in the day of carbon fuels, when the unity of man and nature was said to be heresy?”

Xavier nodded. “Yes, but the traditionalists still believe eco-theology is mere paganism. And this—” he indicated Lazare’s prosthetic tail, “—all Raimondo would see is dissolution of the sanctioned boundary separating Man and Nature. He would not look kindly upon it—nor your candidacy for the Priesthood.”

“But—” Benny floundered. *Hurricane-churned waters aren’t nearly as treacherous as politics.* “Wasn’t the issue of ecological sin determined by the Pope in 2015, and ratified by Vatican III?”

Xavier shook his head sadly. “For us, yes. For the prelate who holds our Mission’s purse strings—*no.* Raimondo barely tolerates our multicultural expressions of faith. I don’t want to push him further.”

Father Superior has made his position clear. Further pursuit not only risks my future vocation as a priest, but risks the children's well-being.

Xavier patted Benny on the shoulder with a warm, consoling hand. "Think of it this way, son. The Church is like an old supertanker—it has a lot of moving parts and enormous momentum, making it tough to turn. Set this project aside, and we'll say no more."

The thought of blind obedience—against his clear discernment of a higher good—left Benny with a hollow ache in his chest.

But for the sake of *les innocents*, he folded his arms and bowed his head.

Obedience does not mean blind subservience. There has to be a way.

Father Xavier stood behind him, watching the video feed as Benny panned the air-drone's camera across the Mission's roof. Thankfully, they'd survived the initial blow. Now was their golden moment of calm as the eye of the hurricane passed overhead. They could surface for inspection.

The camera revealed a roof dripping with seaweed, its paint scoured by debris from the churning water and spattered with small black blobs.

More tar-balls. A nasty mix of old oil and sand, churned up by the storm.

"Looks like just the mast was damaged," Benny said. The three-story pole dangled askew, hanging from the central peak of the roof by its cables.

"Can you repair it?" Father Xavier asked. Not only was it a mooring mast for the supply air-ships, it was also the radio tower and location beacon for this sector of the coast.

Benny shook his head. “We’ll have to cut it loose before the storm surge on the other side of the eye beats it against the roof.”

“Is there time?” Xavier asked, his voice thin with tension.

“It’ll be close.”

The external hatch clanged open and crew scurried aloft, up the rails secured to the outside of the clamshell roof. One attached a marker buoy to the mast, while another cut the remaining wires.

The Timbalier barrier reef will not be so easy to fix. Rough seas had pounded open a channel through which wind-driven seawater surged. The surf broke down the marshland’s soft mats of grasses, strewn dead plants and mud. Sixteen feet of surge eroded new channels in the marshland, salt water flowing in, threatening the lives of freshwater species.

So much wetlands remediation wasted. Benny seethed. *Was that La Sirène’s satisfaction I heard in the voice of the tempest?*

“It’s free,” the repair chief announced over the comm. The mast slid down the slope of the clamshell roof, and toppled into debris strewn water, the buoy marking its location for later retrieval.

Winds began to pick up, waves chopping the surface of the bay. The cloudbank to the southwest loomed darkly.

Their work done, repair crews scrambled back inside and dogged down the roof hatch.

“They’re in. We can be under before the back wall of the eye strikes us.” Benny engaged the ballast pumps. Down on this level, their low pulsing throbbed through his feet.

Thrum. Thrum. Thrum. Thrum.

Thra-thrum. The rhythm stuttered, split. *Thra-thrum.*

A groaning shudder ran beneath his feet. Benny glanced at the window. The line of water marking their descent slanted. *The Mission is tilting.* Benny checked the readout on the ballast pumps. Both drew power. But only Pump One drew water onboard, pulling them down to safety. *Either Pump Two cracked ... or the intake got clogged.*

He turned them both off, then on again. They powered up, sensors responded—but readouts showed no water flowing through Pump Two.

Benny pressed the comm. “Ballast Pump Two is down,” he announced. “Prepare for a rough ride.” Without full ballast to pull it under, the Mission must ride out the rest of the storm above the surface.

Not good.

“Can you fix it from inside?” Xavier asked.

Benny shook his head. “It’s likely debris blocking the intake. Sending out an ROV to remove it.” Its remote operated arms and hand-like clamps were designed to handle external repairs. The smaller arm would fit up the 3-inch pipe—a familiar task.

Oil mixed with sand; ancient sin made manifest.

Xavier’s sigh puffed out his cheeks. To his credit, he said not a word ... just prayed under his breath.

Benny was more than aware that 18 adults and 33 children risked death if the rear eye-wall of the hurricane struck the Mission while above the surface. He felt the tension rise, as if the entire facility crackled with electricity.

Saint Raphael, keep the gulf quiet ... He’d better find the problem, and fast.

Cameras showed increasingly murky water as the ROV dropped down the chute toward the bayou floor.

“... and now we see through a glass darkly ...” Xavier intoned.

Benny guided the undersea drone with small ticks of his fingers on the joystick. Clumps of seagrass struck the ROV's camera lens as it followed the underside of the Mission, the long strands tumbling, whipping against the lens. Twin cones of light from the headlamps barely pierced the murk. He angled the lights upward, revealing the oval of ballast intake port #2.

Covering it—a thick, black tar-mat, oil mixed with sand; ancient sin made manifest.

T he pump's suction must have drawn it up. Benny manipulated the waldo controls, tele-maneuvering the ROV's hand to grip the tar. Its claws broke through the sandy crust and sank into the gooey mass. He eased the gripper downward, hoping to pull the tar away from the intake.

Instead, a long string of goop stretched downward. When it sagged and broke, viscosity pulled most of it back into the mat.

Benny opened the gripper, to release the tar he'd managed to pull away.

The hand jammed. He could feel the grinding through the haptic feedback. "Poo-yi-yi that is *stuck*, stuck," Benny growled. "Sand in the gears. And I can only imagine how gummed up the ballast filter is."

"What now?"

Benny shook his head. "It'd take too long to reach the filters from inside. It'll have to be cleared manually, outside. But a diver's hand won't fit up that little opening."

An adult's hand won't fit. But a boy's?

They both looked at the radar feed on the weather monitor. The eye wall was almost upon them.

What's the point of obedience, if it kills us all?

Benny shot Xavier a look from under lowered brows, then thumbed the comm. “Lazare, come back to the workshop.”

Benny watched Cece wrap waterproof skin tape around Lazare until he was thoroughly bound to the finny end of Observation Drone #19.

Looks good. The drone’s tracer is still live. If worse comes to worst, the ROV can pull him out.

Cece eyeballed her handiwork, her mouth set in a grim line. “Are you sure you want to do this?” she asked.

Lazare squeezed the manual controls, wagging his silvery “tail” at her while grinning from ear to ear. He held up the other skinny little hand, his expression grown serious. “I want to clear the tar,” Lazare said. “For my siblings. For us all.”

In that moment, Benny saw the man that Lazare might become, if only given the chance.

Capable. Determined. *Brave.*

Sea and sky merged into a roaring, raging torrent. Battered by 130-mile-an-hour winds, the Mission shuddered and groaned. Her clamshell shape deflected some of the blow, but not enough. She bucked and shrieked as the sea anchors tore loose, dragging them along the lakebed.

The drone Benny sent with Lazare had spun out of control in the currents. Shortly after Lazare dropped through the hatch, the ROV’s camera lost sight of him. The last Benny had seen was the tiny cone of light from Lazare’s headlamp receding as he maneuvered from hand-hold to hand-hold across the Mission’s underside.

Benny prayed for what felt like hours as he kept a forlorn watch on Lazare's tracer signal, his heart gripped with shame and terror. ... *O Virgin, Star of the Sea, Our beloved Mother, we live in the shadow of a danger over which we have no control; the Gulf, like a provoked and angry giant, spreads chaos and disaster. During this hurricane season, we turn to You ...*

He prayed until a head popped through the hatch, the dark curls dripping water. "It's clear," Lazare coughed. "Start the pumps."

Benny rushed to pull the cold, exhausted youth the rest of the way through the hatch. Lazare flopped limply onto the floor in a tangle of debris.

"She helped me," he gasped, his chest heaving with great breaths.

Benny noticed Lazare wore no scuba mask, carried no air-tank on his back.

"Where's your gear?"

"She took it." The young man looked up at him, his eyes wide with wonder. "Said as I was half fish, I didn't need it. Then she helped me pull out the tar."

How can that be? Was he really down there without air for over a half hour ... The hair on the back of Benny's neck rose. "*She?*" he asked.

"La Sirène," Lazare replied.

Thrum. Thrum. Thrum. Thrum. Benny felt the low pulse of two pumps through his feet.

Father Superior Xavier de Charlevoix sat next to Benny on the Mission's airboat. Strings of Mardi Gras beads from the boat parade still hung from the canopy above them. The beads swayed gently as the airboat rocked in the

wavelets, the big propulsive fan behind them silent as they observed the children playing in the sunlit bay.

Lazare towed a line of children wearing floats, his silvery tail flashing in the sunlight. No more skin tape, no more kludged prosthetic: Lazare's new tail was designed for purpose, a perfect fusion of biotech and boy.

With one outstanding flaw: It still lacks a brain/computer interface. But I've pushed this as far as I can, without outright rebellion.

"Congratulations on the new design." Xavier favored Benny with a sidelong look.

Benny sensed the judgment coming and thumbed the turtle beads of his rosary. "It's still a work in progress. There's more to do integrating haptic feedback so Lazare 'feels' his tail."

The neural link. Benny couldn't help but walk where angels feared to tread.

"I see," Xavier hummed. "And the artificial kidney?"

"That's all Cece—'twas her idea to miniaturize life support systems, fit them in the tail."

The youngsters squealed with glee, arms splashing. Soon, Lazare would be able to teach them to swim. *If* Benny got the financial support to build them all prosthetics. *If* he could build and miniaturize neural links, so the tails functioned naturally for young children.

Cece slipped off the air-boat's deck into the water, Nola in her arms.

"And what will they do as they grow up?"

Much more than they would tethered to life support units. Benny bit back the retort.

"I hope to engage them in wetlands restoration projects. Replanting seagrass, rebuilding barrier reefs, bio-

remediation. *Bon Dieu* knows we need all the hands we can get.”

“Hmm.” Xavier snorted. “I see.”

Father Superior shifted in his seat to face Benny, his expression grave. “You probably know I can no longer, in good faith, recommend you for the priesthood,” he said.

Benny’s heart sank as he watched Nola grab at the water, splashing Cece. He couldn’t imagine leaving the Mission, his work. The *children*.

“Disobedience cannot be rewarded. I have discerned your path has diverged. Therefore I’ve sent recommendation to Father General—”

Benny swallowed back tears.

“—that you continue with us on the path to ordination as a lay Brother, *in charge of the Mission’s new Sirenomeliac program*. Its utility is undeniable. Permission has been given and funding secured to develop that neural interface of yours.”

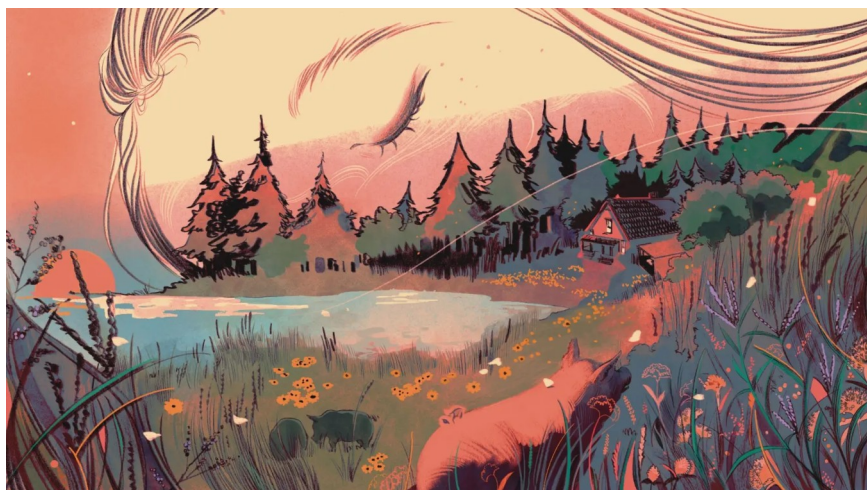
Benny tried to keep his cool. He really did. “Raimondo’s footing the bill?” His voice cracked.

“No,” a slow grin spread across the Father Superior’s face. “You’ll be answering to a higher power now, son.” Xavier leaned forward, his voice a low, conspiratorial whisper.

“*Rome.*”

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Chapter Nine

The Long In-Between

*A father's effort to honor his daughter's memory
through a rewilding project collides with his neighbor's
conventional farming practices.*

*Author: Andrew Kenneson
Illustrator: Molly Mendoza*

April 5, 2022

I got my first glimpse of the place today. Drove out there by myself and knelt in the dirt and ran my hands through the dry clods. Nobody else out there, save a few crows picking over some years-old corn.

I don't think the seller will be a problem. That land gave all it could give and it won't give any more. The ground is all hard and rocky, rutted out with old furrows and bits of

crabgrass here and there. I've seen parking lots with more life.

It's the only piece in that area that butts up to Stanton Forest. The guy across the road seems to be going strong, but not too many other nearby farms are. It's perfect.

I found this old notebook in a desk drawer at home and started writing about all this. We'll see what happens.

April 30, 2022

Everything's signed. Me, at the age of 58 and only ever worked in the city, now the owner of 94 acres of south Ohio cropland. Or what used to be cropland, at any rate.

She'd be proud of me and that made me smile on the drive home from the seller's office. She was always going on about how we needed to give stuff back to nature. "We have so much," she'd say, "so, so much. We have to give it back, Daddy. We gotta find a way."

"Sure, sure," I'd always nod. And now she's gone and I never gave her an answer.

Well, Firefly, here goes nothing.

May 6, 2022

When I stand next to the road, the trees at Stanton are a green row on the horizon. Behind me is the neighbor. To the left and right my land stretches out for about a half mile.

Neighbor's name is Brett. He came by in his truck when I was out there today. "Howdy, neighbor," he said like a cowboy with his head sticking out the window.

"What are you growing?" he asked.

"A forest, if I can."

He looked confused but tried not to show it.

"Soy prices aren't bad these days," he said. "A hell of a lot more in soy than trees. And quicker."

"I'm not gonna cut it down."

He shook his head.

"Well, it's your place," he said and then took off.

May 16, 2022

I've been reading. This land used to be a forest, one of the biggest in the world. Stretched from where the swampland ended in south Georgia all the way up to the tundra in Canada. There were wolves and bears and chestnut trees that showered so many nuts you had to wade through them.

Most of what's left of that forest is in the beams of the old Victorians on Euclid Avenue in Cleveland or in Palmer Woods in Detroit. The rest got burned or blighted and then we plowed it under and grew corn and soy until we couldn't anymore. It's gone, save a few patches here and there.

One of those is the Smokies down in Tennessee. We went when Sadie was 8. I thought she'd want to see a bear, but she talked about birds the whole way down—245 species there, she said. We walked all over and I could tell that this was a different sort of woods. Deeper, darker. Smelled like old leather and life.

Sadie wanted to camp in the park, but I didn't care to sleep on the ground. Still don't, actually. I woke up in our hotel room to find her on the balcony, staring off at the mountains, her little hands gripped tight on the railing.

We can't do the Smokies here. Sorry, dear, we gotta crawl before we walk. We're gonna start with grassland and then trees. We could just let it go, let nature take her course. But we'd probably just end up with a haphazard field of soy plants. So, grass. And water. And these people over in England think pigs are a good idea. So maybe pigs, too.

June 4, 2022

I don't know where she got it from. It wasn't from me. I grew up in the Columbus suburbs. Lived in the Columbus suburbs. Ran the dealership in the Columbus suburbs after Dad died. My idea of interacting with nature is one of those documentaries with the British guy talking about starfish and antelopes.

But there was a little creek behind our cul-de-sac and she'd spend hours down there, looking at bugs and toads and building dams with rocks. Come back all muddy and I'd hose her down in the backyard, with her screaming and trying to dodge the water.

"Why do we have all this grass and nothing else?" she asked me once as we walked through our neighborhood. "What are the animals supposed to eat?"

Which brings me to the pigs. The pigs can help because they root around and turn up the hard soil. Then they shit everywhere and help fertilize the ground for other plants.

Or that's what this guy I called in England said.

But right now my land is like those lawns, nothing for the pigs to eat. And that's saying something, because I've learned pigs will eat about anything, even roadkill. So I gotta plant grasses and berry bushes and other plants to create a first layer of food.

I'll also build a few ponds to try to attract birds and create a different type of habitat. And I gotta do it all before winter gets here.

June 15, 2022

It's not much of a pond, but it will do. Rented a backhoe and dug out a pond at the base of where the land slopes slightly down to the south. It's about the size of the neighborhood swimming pool by the place Sadie grew up. Then I ran a pipe up from the water main and filled it. It won't stay, but I'm hoping the fall rains will keep it filled just a bit.

Today, I seeded half the place with grass, wandering the whole place with a bag of seeds over my shoulder, tossing them everywhere. It took all day, out in the heat, no shade. A few birds swooped in to eat some seeds, but it was lonely otherwise. I'll come back tomorrow and do the rest.

I went with a mix of big bluestem, switchgrass, and prairie dropseed, which are all tall grasses native to this area.

Big bluestem will be shoulder height in a few years. And I did red clover and buckwheat, which are lower grasses. The clover apparently will restore some of the chemicals we need to grow in the soil.

Next week, I'll do wildflowers and shrubs, like black-eyed Susans, butterfly weed, sunflowers, and elderberry bushes. Those will shoot their roots into the dry and compacted soil and break it up, allowing for water and worms and nutrients to get in.

And next to the pond, I planted a few cattails that I dug up from the stream behind the house. They'll probably die in a week, but it felt good to have something Sadie would have touched on the land.

August 25, 2022

The most magical thing happened today. I went out to the land and was walking around like I always do. There's some green shoots all over from the grass I planted, plus I saw a few flowers that I didn't.

Ever since I planted the grass, I've been seeing mice scurrying around eating the seeds I threw down. I was near the pond, watching a mouse maybe thirty feet away dip in and out of my sight as it hurried up and down the old furrows. And then, wham, a red-tailed hawk shot from the sky and grabbed the mouse in its talons. I was so close I could hear the mouse scream. The hawk swiveled his head, looked at me for the briefest moment and then took off again, heading toward Stanton Forest.

It all happened so fast that I didn't realize I was holding my breath.

October 14, 2022

Fall's here, and I'm worried. We haven't had much rain, and not much of the grass has rooted in. The pond is just a muddy puddle. The cattails are still there, thankfully, but I haven't seen as many ducks as I saw at first.

I'm afraid I didn't get things in quickly enough and winter will kill off everything that's been growing. But I dearly hope it all makes it through winter alright. I could say the same for me.

I drive by the spot where she hit the black ice on my way to work. Even in the summer, I find my foot hitting the brake a little early. In the winter, I go through it so slow cars behind me hit their horns every now and again.

The tree she hit still has the scar, this unholy blotch of black. I thought it might kill the tree when I first saw it two years ago. But it's still hanging in, that old oak. I get a real good look at it in the winter.

March 16, 2023

I didn't go out there much this winter, so there wasn't much to write about. Just twice, both times all frozen over and snow on the ground, the grass brown and the cattails shivering in the wind. A desolate place, really.

But now, spring, and melt. And disappointment. Even this early, there's buds on trees and low lines of green in some of the fields along the road on the drive out there. My place is mostly dirt and mostly empty.

There's some tufts of grass, but it's hard to say what I put there and what the wind did. I must have planted things too late. Or the rains didn't come. Or something else. The upshot is it's no closer to being a forest than I am to being a raven.

Makes me wonder what I'm doing out here. Maybe I'll just sell the place.

March 19, 2023

I couldn't stand the thought of her trapped in the ground. Her mother and I hadn't talked in a few weeks when we both went out to the river that ran about two miles from our house with the urn. It was spring, a few months after the wreck, and the water was a swirl of snowmelt.

The stream behind our house ran into this river. Sadie had it all drawn out on a map in her room, otherwise I wouldn't have known. A summer project, mapping our watershed. She had decided by then that she was going to either be a freshwater ecologist or a zoologist.

We poured the ashes in the river and watched them float away, just a small patch of gray in a sweeping current of brown.

March 22, 2023

I was out all day today with my seed sack, getting grass down all over again. By the end my boots were so caked with mud they felt like cement blocks. Too tired to write more.

March 26, 2023

Today I brought my pigs out. Eight of them, full grown and snorting. The guy I bought them from brought them here in a trailer and everything.

"You got a place to put them?" he asked when he pulled up.

"Anywhere is good."

Guy shook his head and undid the latch and the eight of them trampled out onto the mud. They were all old sows, done producing piglets and set for slaughter when I got them. \$150 a piece, a steal, the guy had said.

I'll be putting corn out for them to eat, but the idea is that they'll be able to find their own food by the summer. With them out there, I'll have more reason to come back. I'm excited about that.

April 5, 2023

I woke up this morning with a voicemail from Brett. We'd exchanged numbers last fall when we were both looking for a lost dog from the neighbors further down the road.

Apparently, some of the pigs had gotten into his soybeans and rooted up a few plants. He didn't sound too happy about it. "Those pigs are feral. If I see them on my land again, I'll shoot 'em."

Fair enough. I ordered a couple movable fences today. Instead of having them roaming, I'll keep them on an acre or so then move them in a week or so.

But already, I'm seeing more grass, more blooms. When I was out there most recently, there was a whole flock of finches singing and hopping among the green shoots.

July 15, 2023

Full summer, as of a few weeks ago. My Lord. I've got grass and sunflowers up to my knees. There's a couple of geese that seem to have taken up residence in the pond. I saw my first deer a few days ago.

The pigs are basically magic. Anywhere I've put them, a few weeks later, it explodes with life.

For the first time, when I stand on the road with my land on one side and Brett's on the other, I can really tell a difference. His is all these ordered rows. Mine is haphazard. His is all green. I've got yellows from sunflowers and black-eyed Susans, greens in the grass, some orange and red from flowers that I have no idea what they are, and browns where nothing is growing yet.

It feels like mine, this stretch of land. I don't know what to call it. It's not a farm. It's not a forest. It's still in that long in-between. But it makes me smile, looking out onto my misshapen kingdom, a kind of patchwork quilt knit by no one in particular.

August 24, 2023

The letter came in the mail to my home address. It was all dressed up and on legal letterhead. McCovey and Haines, it said at the top.

“To Mr. Gregory Elroy, the owner of property located at 501 E. Larson Road,

We write to you regarding the nuisance you have created on your property at the above address. Our Client, Mr. Brett Tubbs, of 400 E. Larson Road, has noticed a considerable uptick of deer, squirrels, birds, and other nuisance animals entering his property and disrupting his planting, seeding, and growing of crops.

Having farmed this land for 17 years, Our Client has never been so disrupted in his labor. We urge you to cease from all activities related to your “re-wilding” of the property at 501 E. Larson Road including the planting of wild grasses, trees, shrubs, and other flora and fauna and the additional lack of maintenance that might further disrupt Our Client’s legitimate farming operations.

If you do not, we will have no choice but to pursue legal action to remedy this situation in a court of law.

Sincerely,

Mike McCovey, Attorney at Law”

Rewilding. It’s funny they used that word. Brett had driven by a few weeks back and we’d talked about the weather and the Reds. He seemed over the pigs thing.

I told him the word for what I was doing was “rewilding,” which I’d only just learned from some YouTube videos. He’d shrugged. “As long as it don’t bother me,” he said.

It must have.

My second thought came unbidden. It’s working, I thought. It’s working.

August 29, 2023

After a long time thinking, I decided to ignore the letter. What could they really do? I owned the land outright. If they wanted to come and take it from me or sue me over a

few deer wandering into Brett's fields, they could go right ahead.

I got a call from one of the principals at school when Sadie was 12. Apparently she'd found a baby squirrel on the playground and had been keeping it in her front pocket and feeding it Gatorade with an eyedropper in class. Her teacher had heard it squeaking.

"If I don't have it in my pocket, it's gonna die, Dad," she said over the phone, her voice panicked and teary. "It won't stay warm enough anywhere else."

I begged the principal to let her take it home and we'd take care of it here. I found a shoe box and hooked up a light to keep it warm.

"That won't keep it warm enough. It's gonna die," she said. "When it's that little it's supposed to be next to its brothers and sisters and mother almost all the time."

I had to drag her to school and we left the squirrel at home. I don't know what happened, but when we got home the light had gone out and the baby squirrel wasn't moving much. It died a day later.

She didn't talk to me for a week, just slamming doors and scowling. Any time I walked in a room where she was, she'd screw up her face and yell, "Murderer!" And then storm out.

Look what I'm doing now, Firefly. The opposite of murder.

September 25, 2023

I got another letter. Said similar stuff but then asked for a meeting at the lawyer's office, and I went a few days later. The letter said I should bring a lawyer with me, but I don't know any lawyers and didn't feel like calling one.

The office was downtown, with lots of wood paneling and leather chairs. Brett was there, in the guy's office who sent the letter. He just nodded when I came in.

“Mr. Elroy, you have been in violation of the county’s land-use regulations,” the lawyer said, his voice oiled and smooth.

“Your land is intended for use in agriculture, and you seem to be doing nothing of the sort. As a result of your negligence to your land, my client has suffered damages from the excessive wildlife disturbing his crops.”

There was a silence, as I thought about it.

“What do you mean by excessive wildlife?” I said.

“There’s deer out there every morning,” Brett broke in. “They’re eating my seedlings. And the birds, too. So many damn birds. I just had my lowest yield in 15 years.”

I shook my head.

“But it’s my land,” I said.

The lawyer smiled a thin smile.

“Well, yes, but that doesn’t mean you can do anything you want with it. And the law says that parcel is to be used for agricultural use. I hope you understand.”

I didn’t understand. But I didn’t get angry until I was driving home. I looked out the window and at the strip malls and fast food chains and parking lots with little bits of grass and trees in between. And beyond it, for miles, more asphalt and concrete with little bits of green in between. All the way to the ocean in either direction.

As we walked out of the office, Brett had said, “It’s because of you environmentalists that people like me can’t make a decent living anymore.”

I never thought of myself as an environmentalist. But Sadie was right. We did have too much. But, apparently, it was illegal to give any of it back.

October 17, 2023

I went out to the land today and just walked around. I wouldn’t say it’s pretty, especially now that it’s fall and the flowers have gone for months. The grasses are all scruffy and brown. The pigs are all brown and muddy and old.

I think maybe what's scary to some people is that I'm just letting it go. Brett is out there every day on his tractor, tilling or planting. I'm not. I'm just letting it be. I really don't know what's going to happen to it. Maybe that's a little scary to be next to.

On the night she died, Sadie was at my place for the week. Her mother and I had just bought her her first car, a used 2014 Honda Civic, after she'd spent a few months learning to drive on ours. Simple, easy to drive. Safe. Good gas mileage. I thought she'd love it. But she didn't.

"I don't want a car, Dad. I only learned to drive so I wouldn't hurt your feelings. Do you even know what cars are doing to the earth?" she told me when I first showed it to her a week or two before.

It'd been sitting in the driveway ever since, the keys still on the counter where she'd put them. Her mother had dropped her at my place.

And she'd been sulking all week. She'd get like this in the winter. Couldn't go outside except to tramp around the block in her snow boots. Plus, you know, being a teenager.

I thought I might take her to the movies or something. She was sitting on the couch, lookin' out the window.

"Firefly, you want to go—"

"You call me that, but did you even know that fireflies are going extinct?" she snapped.

I balked. I didn't know that.

"Cause there's no more woods for them to live in. They can't just live on sidewalks and front yards. But that's all there is around here."

"Well, can't we do something about—"

"Sure, we could. But people like you never will. I'm not your firefly, Dad."

With that, she stormed out of the room. I sank back into the couch. I heard a car start up in the driveway a minute later. Huh, I thought, maybe she wants that thing after all.

The phone rang twenty minutes later.

October 30, 2023

When I pulled up to the land this morning, there was a sheriff's car in the rut where I usually park. He got out as I pulled in, and he was holding a brown packet in his hand. His name tag said Lt. Briggs.

"Morning," he said, as we approached each other, like we were friends. I nodded.

"I'm guessing you probably know what this is," he said, handing me the packet. I nodded again.

I took the packet and could feel the heavy pages inside of it. This must be how all this ended. We stood there for a second, him looking off in the distance, me listening to the breeze.

"You know, I've been driving by here for as long as you've been doing this," Briggs finally said.

"You think I'm crazy too, probably," I said.

He shook his head and crossed his arms and looked out over my scraggly land.

"I don't. I truly don't," he said after a while. "My family's lived around here for five generations. My great-great-grandfather was one of the men who cut down these woods and tilled the first farms. I used to take a lot of pride in that."

"But you don't now?" I said.

"Oh, I do. But, my kids, they lose their minds when they see a deer. They don't know anything about anything wilder than our backyard."

I looked out on the land. I couldn't say it was much wilder than a backyard, but just then, three ducks took off from the pond and beat their wings over our heads.

"Well, not everyone agrees," I said, holding up the brown packet.

Briggs laughed.

"No, clearly not," he said. "But have you talked to the land trust? Or the people at Stanton?"

I shook my head.

“I haven’t been talking to much of anyone recently. Just been out here where it’s quiet.”

“Well, maybe you should give them a call. They might be able to help you more than the birds and deer.”

With that, he tipped his hat and strode back to his car, leaving me with the packet in my hand and the wind blowing in my ears.

February 19, 2024

Well, it’s settled then. The land is now a nature preserve. And it’s being absorbed by Stanton State Forest.

The people at the land trust straightened it all out rather quickly. They paid me one dollar for the land. Then they transferred it to the state’s control. But not before they helped me secure the right to live and traverse the land for me and my ancestors for all time.

That last part was their lawyer’s words, not mine. But I like it. For all time.

I’m building a cabin out there. It might be ready in a year. Maybe one day I’ll move out there. And I’m finally going to get around to the other pond once the freeze breaks.

Then, trees. It’s time to plant trees. We’ll have our forest yet, Firefly. Oaks, hickories, maples, dogwoods. I can just see the saplings shivering in the spring air. It’s beautiful.

And the fence. I’m helping Brett build a fence around his land. It was part of the condition of the agreement for them to drop the lawsuit. It’ll be tall enough to keep out most of the deer.

I don’t blame him. The fact is, there’s no way for the wild to co-exist next to his rows and rows of soybeans. We wave to each other again.

And the people at the state agreed to one more condition. They’re going to call this little patch the Sadie Elroy Preserve.

August 4, 2031

I watched the sun go down from my little porch in my little forest. The birds were singing: sparrows, mockingbirds, an owl a little later.

The trees aren't high or thick enough to block the view and cast much shadow yet, but one day they'll tower over this place and it'll be in shade all day long.

There's water striders on the pond, and birds dipping through to catch them. I saw two raccoons drinking from the other pond yesterday. A few turtles too, years and years after I'd introduced them. Day before that, it was a flash of fox fur in some of the low bushes. The soil, when I kneel down and cup it in my hands, is soft and loamy. Some nights, there are even fireflies.

I walk the trails most mornings as the sun comes up and see what I can see. Every day, it's something. I walk a lot slower these days, but that's okay.

Some days, in the quiet of the morning, when my mind is focused on a deer track or a birdsong, I can hear her laughing, off in the distance.

Andrew Kenneson (he/him) works with the Western Reserve Land Conservancy in Cleveland, Ohio on urban green space projects. He's previously written for local newspapers in Georgia and Alaska.

Molly Mendoza is an artist living in Portland, Oregon. Through their work, they explore the complex emotions of interpersonal relationships and self-love with a focus on layered visual storytelling, mark-making, and color. They write stories, they paint murals, they teach students, and they draw.





Chapter Ten

A Gift of Coconuts

*A family races against time to prepare
their coconut farm for a massive storm surge.*

Author: Melissa Gunn

Illustrator: Molly Mendoza

They used to say that when the ancestors arrived, they lost most of the food they brought with them. It wouldn't grow—it was too cold, you see? I wish they could see us now. Pretty much every crop that failed back then, a thousand years ago, we grow now. Especially coconuts, for the cities farther south. You can make almost everything from coconut. Not that coconut farming's easy. It doesn't pay too well, either. At least, sometimes the pay's good—but then sometimes the pests are bad. Sometimes the trouble is drought. This time of

year, storms come through. Storms come through everywhere, but I'm sure they come most of all here. It's shaping up to be another stormy summer. I say as much to Granpop. Typical Granpop, he starts to yarn right away.

"It used to be, storms were in autumn or winter," he began. "Not like this. It's not supposed to be like this. When I was a lad, you'd get one cyclone a summer. At most!"

"Yeah, Granpop, you always say that."

"Don't you get cheeky, Aroha," he says. "You give your elders some respect."

I grin at my sister, who's beside Granpop, making sure he doesn't topple over in a gust of wind. We're all on the beach, watching the waves crash to shore as the swell grows. It's hard to look away, wave after wave coming in. A big one rushes in, faster than we can run—faster than Granpop can hobble, anyway—tugging at our legs. Foam reaches as high as the bottom of my shorts, and the sea drags at me as the wave rushes out again.

"Right, Granpop, that's close enough," my sister says. She's short, but bossy, always. "Let's go back to the house. You can tell us the way it used to be once we've double-checked the solar rigs."

See? Bossy. She's right though: With a storm coming, we need to make sure we don't lose any more solar panels. We're down to the minimum we can run off as it is. We lose another panel or so, we'll have to join a convoy south to get some new ones. No one convoys for fun except my dad. He's always had itchy feet. I reckon he would have traveled the world if he could. But he got stuck here when the flights stopped. Lucky for him he learned to sail, else he'd have lost it. He's out sailing now, checking the marine reserves. Guess he'll be heading for home with a storm on the way.

We retreat from the edge of the sea, taking the short way back, climbing over the carcasses of trees that used to be inland, before the tide rose to meet them. Even Granpop clambers over the stripped, salt-encrusted trunks of poplar

and pōhutukawa. He's pretty spry for such an old man. He remembers when the sea was farther away. He grumbles about that as he climbs.

"Shoulda been paddocks here, Aroha. You tell your sister, she should get the land back from the sea gods, Hine-moana and Tangaroa, eh?"

I offer a hand to steady him as he climbs up the final bank. "Nah, Granpop. I think the sea gods can have that paddock. We'll just use what we've got further back, eh?" My sister's more into electronics than appeasing the gods. I know she's just pretending not to hear Granpop so she doesn't have to argue with him again.

"It used to be, storms were in autumn or winter," he began. "Not like this. It's not supposed to be like this."

Granpop ignores my hand and trudges on up the slope. Halfway up, he stops and curses. There's a white stick half buried in the sand nearby. We missed it, coming down to the sea by the creek. It's our survey marker, washed out again. We're still losing land to the sea. They say there's only a few centimetres rise to go, then things will start to even out. I wonder if Granpop will last long enough to see that happen. He gets so mad about every lost bit. I bend to pick up the survey stick. As I straighten up, I see tears on his cheeks.

"Hey, it's OK, Granpop," I say. "We don't even use most of that land."

He turns watery eyes on me and I know I've said the wrong thing. Thing is, Granpop thinks he should have been able to stop it—the rising seas, the storms, the works. But all the damage that led to those things was pretty much done when he was a kid. He couldn't have made much difference. But he doesn't see it that way. Not when he and Granma planted the trees he's climbing over now.

Unexpectedly, my sister chimes in.

"It's not great to lose land," she says. "But it's not your fault either, Granpop. We know you and Granma did what

you could. And look what we've got because of that. We've got the most southerly tropical fruit farm in the world!"

Granpop is still sniffing, but he straightens up. My sister always has a way with words.

We climb over the lip of the land together, heaving Granpop over the last bit of dune edge where the kikuyu grass hides a sandy overhang. He's too old to go down to the sea, but he gets agitated if we leave him behind. The wind blows loose sand in our faces, stinging, but that's not all bad. We need salt and sand to grow our coconuts, after all. Tāwhirimātea, the wind god, is giving us a helping hand with that.

Once we're over the top, my sister takes charge.

"Right, Aroha, you get Granpop back to the house. I'll get the kids to help me with the storm lashings. Make sure Mum knows we're back; she'll be in the tunnel houses."

I do a mock salute. "Ma'am, yes ma'am," I say, and she makes a face at me before taking off at a run, bellowing for the younger kids to come help, this instant, now. The kids are a ragtag group of cousins and younger siblings. It's one big family running the farm.

Granpop and I make our way through the coconut groves—carefully, a falling coconut can be lethal and the wind's getting up a bit—and then through the banana plantations. I touch a trunk here, a thick purple petal there. It's a sort of reassurance. The trunks aren't old. Bananas grow fresh ones after they've fruited, but the bananas have been here a long time, since Granpop was young. They're what started off the whole farm. Once the bananas began to grow well, Granpop decided to try some of those ancient crop failures. We've got lots of different bananas, papaya—you name it. Even mango. That nets a good price in the markets down south, where it's still too cold for it to grow. They say the cities used to import bananas from the tropics by the container load. We still get the odd ship coming in, but no one thinks it's worth bringing bananas back. Who wants

expensive overseas fruit when you can have local low-carbon produce?

The wind-ribboned leaves of the bananas are banners in the breeze right now, the rustling sound of them just like the sound of the sea. It keeps me up some nights, wondering if the sea has come that bit farther, storm surging up the hill. I imagine the waves tearing out our crops, battering at the house. It's a secret fear I've never spoken aloud, but I shiver at the thought. Granpop, who's been muttering under his breath all this time, stops and looks at me.

"You feel it, don't you," he says. "Tangaroa wants to reclaim this land."

My eyes go wide and I think my mouth must match them because the warm wind dries my tongue.

"No need for lollygagging," Granpop says, dragging the word out of some ancient vault of memory. "I see you thinking it. Only thing is, what you going to *do* about it?"

I don't know what to say. Do I claim he's wrong? I sputter incoherently, and his gnarled hand closes over my arm.

"One of these days the storm will come," he says. "The big one. Then we'll see who believes in the gods."

He's off again. I wish he wouldn't go on about gods. Whether they're here or not, gods aren't something we can reason with. I'd rather keep on planting trees, eat what we grow right here in front of the house, keep life simple. But Granpop keeps on at me. I think the latest land slip has shaken him. We're not so far from the sea. The creek goes right by the house, so a bad storm surge would be a big problem. Bigger now than it was when Granpop was growing up here. Everything's a bigger problem now. But we adapt, because we have to. It's our way to make the best of things.

"Come on into the house, Granpop," I say. "Let's get a cuppa."

Our water is heated by the sun in pipes on the roof, which is fine unless we get days of storm. It's one of the things Granpop set up when he was young. It's amazing how well it's lasted. Yesterday was sunny, so the water comes out steaming. We sip our kawakawa tea, its gingery taste soothingly familiar. We grow a bit of what Granpop calls "real tea"—camellia, that is—but our winters are too warm for it, really. Granma used to drink most of what we grow—said she never could get used to kawakawa. Granpop would tease her about her ancestors going too far with tea plantations. She'd protest, laughing all the time she told him off for being prejudiced. It's nearly a year ago she passed, but I think I'll always miss her. Granpop even more, of course. I reckon that's why he's a bit unhinged these days. Emotional. Lots of things set him off.

My sister comes in while we're still drinking.

"Come on," she says. "We need more hands on the solar. Some of the stands have rusted, so we'll have to fix them before the wind gets up any more."

"Got any timber left?" I ask.

She makes a face. "Nah. We'll use the giant bamboo."

"You make sure it's well secured then," Granpop pipes up. "Bamboo's lightweight. It could turn into a flying spear in the hands of Tāwhirimātea if it gets loose."

Typical Granpop, coming up with nightmare scenarios we really don't need. I mean, he's right: It *could* happen. But it won't. Plus, gods, y'know?

I make sure Granpop's settled with an oat cracker and more tea. He may be spry, but he sleeps a lot too. I go to the porch to get my gloves. The bamboo round the back of the house grows faster than trees could, and it's actually a great building material, but the splinters from it are like nothing else. I liked it when we had timber, long planks of pine from the forestry, but trees are too precious to waste on timber for solar. We've been using up a stash of planks that Dad bought years ago. Guess they're all gone now.

The wind whips at my hair as I emerge from the house. My hair will tangle into a nightmare of salty curls if I leave it out in the wind, so I hastily bundle it back, tying it with a strip of flax.

“Dad back yet?” my sister asks as I join her in the solar field, the one place we don’t encourage plant growth. A sheep baas as though in answer, and we both crack up. The sheep keep down the kikuyu, which would otherwise smother the panels. They provide wool and sometimes milk for us. They’re pretty chatty, too. But I shake my head at her question. I didn’t see Dad’s boat’s mast down at the dock at the mouth of the creek when I left the house. He’s been out doing fish counts in our marine reserve. After the big fish stock crashes when I was little, heaps of new reserves were set up. But you can’t breed fish from nothing. Dad’s main job is keeping an eye on what’s left, hoping that some of it takes off again soon. There’s other stuff he does too, taking water samples and sea temperatures, but it’s pretty much all counting.

One side benefit of the job is that he clears the kina barrens. Kina are sea urchins. Free protein for us, more habitat and less competition for the fish. One day there might be enough for folks to eat fish again, but meanwhile it’s kina all the way. Trouble is, Dad gets all enthusiastic when he’s collecting kina and doesn’t always check his marine weather forecasts. But this isn’t the time of year for kina—that’s spring — so he should be just counting fish, no distractions.

Dad’s main job is keeping an eye on what’s left, hoping that some of it takes off again soon.

“He must have taken shelter down the coast,” I say. “It’s getting too windy for him to dock in the bay. Or maybe he’s anchored out.”

Neither of us speaks the worry we feel. Dad should have been back before the wind got up so much. Our bay isn’t sheltered from an easterly storm like the one that’s on its way, though, so he could have taken the boat somewhere with

better moorage. Talking about it won't change anything. We can't afford a satphone and there's no cell coverage in our bay, so until Dad docks somewhere, he's out of comms.

"You help the kids here, I'll start at the other side," my sister says. It's a familiar drill. We clean the panels regularly, but repairs tend to slip with all the other work involved in keeping the farm going. So every storm, we end up here in the solar field, making last-minute repairs. We work until we meet in the middle. The wind's howling now. We shout to be heard.

"You done?"

"Yep. Seen Dad?"

"Nup."

Conversations in a gale aren't super wordy. We herd the kids back inside. They're glad to go, which says something about the strength of the storm on its way. Mum's still out, though. The tunnel house holds our most tender plants, things like cocoa and vanilla that—even in the warmer climate we have now—still can't grow outside. Cocoa nets an even better price than mango, so it gets coddled through both droughts and storms.

It's my auntie who gets the kids set up with tea and bananas, then shuts the kitchen door behind her.

"You heard from Derek yet?" she asks. Derek is my Dad. My sister and I look at each other.

"No, we've been outside, how could we?" my sister says.

My aunt's face looks pinched somehow. "The new forecast is just in," she says. "The storm's been upgraded to a Category 6."

If Granpop weren't still asleep he'd accuse me of lollygagging again, but it's worse than that. Beside me, my sister gasps. For once she has no words. Category 6 is worse than a cyclone. It's going to be bad, really bad, here on land. No one should be out on a boat.

“Your uncle Nikau has stepped down the wind turbine. Hopefully, we won’t lose any blades this time.” My aunt is back to business, her tone clipped. Her message is clear: We don’t have time to worry, we need to prepare. “Marama, go check on your mum, she should be done fussing over those plants by now. Aroha, help me with the bees.” My aunt is the one who looks after the animals. She doesn’t have much patience with plants, even though they are the mainstay of the farm. I don’t even consider protesting today, even though the bees are my least favourite thing on the farm. Stinging insects. Who thought of domesticating those? I like the honey though, and they’re handy for pollination, so I don’t grumble too much as we suit up and make sure every hive is strapped to its rocky pad. Auntie gets me to put a lump of concrete on top for good measure. Even though the wind is warm, funnelled down from the tropics, it’s so strong that my cheeks are chilled and I’m moving clumsily by the time we get to the final hive. The bees are all inside. Although I stumble and fall heavily against the box that contains the nasty things, they don’t bother to emerge. I can’t decide if I am relieved or concerned that they aren’t venturing out. Maybe relieved. Last thing I need is a bee sting. Auntie and I collect Mum on the way back to the house. She’s in the subtropical orchard, banging in extra stakes by some of her favourite saplings.

“Come on in, Alice,” Auntie says. “We’d better get things straightened out inside.”

Mum hits the stake extra hard with her sledgehammer before turning to face us. Raindrops hit us as she does so, huge heavy drops that soak our bee suits instantly. It’s probably just my imagination that the rain mingles with drops already on her face. No one mentions Dad. We all gaze out to sea as we trudge home through the gathering gloom, leaning into the wind.

Stepping inside the mudroom at the back of the house, the relief from the wind and rain is enormous. I hadn’t

realized till this moment how hard I'd been working just to stay upright.

"Reckon we should sleep in the shelter?" Auntie asks Mum. The shelter is a sort of concrete shed, about the only concrete on the farm.

Mum is silent a moment longer. The wind screams while she thinks. There are no windows in the shelter, so no view. No way of keeping an eye on the farm. No way to see if Dad makes it into the bay. But it's getting late, and it's too dark and wet to see much anyway. Mum nods at last. "We'd better. Just in case." No need to say in case of what—we all know. Any storm above a Category 4 is likely to tear the roof off the house, at the least. The tropical plants can more or less take it, but we can't, and despite our best efforts, the house probably can't either.

We go into the big lounge where my sister has been keeping the kids entertained—with stories, as it turns out, reading aloud from our precious store of real paper books. She's fed everyone too. There are dirty bowls perched on armchairs and tables. Granpop is snoring in his chair, but he wakes up with a snort when my sister stops reading.

"Carry on," he says. Then he sees us dripping in the doorway. He wakes up all the way. "Bad, is it?" he asks.

Mum just nods. I reckon she doesn't trust her voice just now. No one's saying it, but Dad's chances are slim, at best.

"Right, everyone, I want you to get the grab bags I know you've kept up to date," Auntie says, taking over. I'm glad I don't have to be the leader. There's a chorus of gasps and protests. We all have a grab bag with emergency gear. But for the kids, especially, it's hard to take seriously. Plus, they grow all the time. I'd bet most of the clothes in their grab bags don't fit. Still, so far we're just sleeping in the shelter as a precaution. Too-tight T-shirts won't matter. Everyone scatters to get their bags. In the silence that remains, I hear the wind, and rain on the roof.

Granpop is still sitting in his chair. I realise his face is screwed up more than usual. Tears run down his cheeks, glistening in the lights. No need to ask why. "It's OK, Granpop," I say. "He'll get back somehow." My voice cracks on the last word. I don't really believe it.

"This world doesn't seem safe anymore, Aroha," Granpop says. "I remember when folks died of boredom and old age in retirement homes."

"Must've been amazing, Granpop," I say. "Doesn't seem realistic." But I know Granpop was born near the end of the last golden age, when people lived practically forever and had more stuff than they knew what to do with. That's the way *his* parents went. I think about the fact that he's maybe lost a child tonight, and me my father, and it's more than I can bear. "Come on, Granpop. Let's get you to the shelter." There's a quaver in my voice, but there's only Granpop to hear. No shame in it. I hold out both hands, and for once he takes them, clinging on to me. His hands are worn, wrinkled, hard slabs of leather, gripping mine fiercely. Together we make our way to the door of the shelter. It used to be separate to the main house, but during some storm or other, Mum and Dad decided it was too dangerous, going outside to get to a stronger shelter. Now it joins the main house through a tunnel. Granpop called it our bit of trench warfare, since we made it by digging a trench and covering it over. The kids and I had the time of our lives using the open trench as cover for games. Granma called it our ha ha, and told us servants used trenches like that so they couldn't be seen, on big old estates over where *her* ancestors came from. That stopped our games pretty quick, we didn't want to be servants, even though maybe we've got the estate thing happening. After that the covers went on and the grass grew over, and now it's just the shelter tunnel. Funny the way that happens. I remembered our games as we shuffled through the dark, Granpop breathing loudly behind me. I can hear the wind more than I should, it starts to blend in with Granpop's breath. Suddenly the roof of

the trench peels back, kikuyu grass flapping wildly, lashing our faces. It's tough stuff, but not tough enough for this amount of wind. I grab at Granpop and connect with his arm.

"Duck!" he yells at me, his voice all hoarse and strained.

I do as he says, and realise that the wind is still going over the top of our trench. Something sails overhead and lands with a thunk. Then another. That one lands in the trench, just missing me. I shine my headlight at it. It's raining coconuts.

"Throw it back, Aroha!" Granpop yells.

I shake my head. Sounds like Granpop's lost it at last. But there's no point in arguing with him. I throw the coconut over the lip of the trench and we hurry on. The last few meters of trench make me realize I never want to be in a real war. Granpop and I run, dodging a barrage of rain interspersed with a heavy fire of green coconut shells. We hammer on the door to the shelter—of course there's a door, it wouldn't be watertight otherwise—and fall over each other to get inside when Auntie opens it. It takes all three of us to force it closed again.

His hands are worn, wrinkled, hard slabs of leather, gripping mine fiercely.

Once we're inside and up the few stairs to the shelter, I start to laugh hysterically. My sister eyes me as she goes around the kids with Mum, making sure everyone is accounted for. She doesn't say anything for a change. Uncle's over at the computer, making sure the power-down is happening smoothly and probably checking the forecast, too. Granpop makes his way over to a bunk and eases himself down like he's seen it all before. Maybe he has. It's cozy in here, if a bit claustrophobic. Dimly lit, rows of bunks on every wall, a big battery that the solar field keeps charged, and a computer in one corner. No windows, but it's ventilated. Mum leaves the kids and comes over with a cup of tea for me, and I get control of my breathing as I sniff the fragrant liquid.

“Thanks, Mum,” I say. “Any word from the other farms, Uncle?” Because of course we’re not the only ones here in the north growing stuff. We have a network with other farms like ours.

Uncle nods almost absently, his eyes still glued to the screen in front of him. He’s watching a satellite image of the storm. It makes a hypnotic spiral on the screen. “Most people are sheltering now,” he says. “Storm got too big, too fast. There’s a few people caught out.” He doesn’t mention Dad, but I see his eyes flick towards Mum, then back to the screen again. “The wind’ll shift south, then west, before we get a break.” I know without him saying, that’s when we’ll go out to look for Dad again. It’s too dangerous outside for rescue work now—the coconut hail would have told me that, if the wind hadn’t. But Uncle goes on. “The tide’s a couple of hours off high. Aroha, Marama, can you get some sandbags down into the stairwell?” That’s when I realize that we’re not out of the woods. Not Dad, not us. Because when the high tide comes in with a storm surge, nowhere on the coast is safe.

Two hours later I lie in the dark listening to the water. The wind has died down, but only because the eye of the storm is right over us, Uncle says. Outside, rain probably still pelts down, thunderous in its own right, but unheard because of the waves. Waves are breaking around our shelter, and I’ve never been more terrified. We can’t get out with all that water out there. We can only hope the shelter holds. Water has already seeped through the sandbags I piled earlier, and we don’t have any more. The dirty brown liquid is lapping at the top of the stairs. Everyone’s in their bunks, except for Uncle, who’s been taping electrical cables high up, just in case. Someone sobs. It might have been me.

“Come on then. Alice. Let’s waiata,” Granpop says suddenly. Mum sits up in her bunk, hunched over because the bunk above her is so close.

“Alright,” she says. Her voice reflects the weariness we all feel, but she starts the singing. First, a song we all

learned at school, something about togetherness. Then the anthem, because that's a sort of togetherness too. She falters and Auntie takes over with some pop songs. Then it's Granpop's turn. He sings a shanty song for weary sailors. We all join in on the chorus; he's sung this song to us so many times we don't need to think about it. Then it's a song about a big whale—that one's for Tangaroa. Typical Granpop. We sing on until our voices are hoarse. It drowns out the sound of the storm and the waves. Finally, Uncle stands up. There's a bit of squelching. The water did come in, but it's not too bad. Nothing's fizzled or sparked so far.

"Tide's going out. Time to go check on things."

Most of the kids are asleep. Auntie is too. Uncle smiles at her a moment before turning to us. "Guess they'll be alright for now," he says. "Who's coming out?" My sister and I get to our feet. So does Mum. I wonder how we're going to get out—even if the tide's going out, the trench is probably still full of water. But Uncle pushes back the chair by the computer, places the computer itself on the chair, and starts to unscrew the wall panel.

"We had an escape route all along?" I ask disbelievingly. My sister and me, we're likely to take over the farm one day. We should have known about this.

"We'd have told you sometime, once the kids were old enough not to sneak into the shelter," Uncle says. He taps the side of his nose. "Secret squirrel, eh?"

I make a face at him. I'm too old for that sort of thing and he knows it. Uncle inserts his screwdriver into a crack at the bottom of the panel. The whole thing comes off, revealing a sort of trapdoor, which he opens. It's well above floor level, and ringed with silicone. Whoever put it there thought it through. Uncle leads the way out. We have to push through a banana palm — that must have hidden the trapdoor from view. It's that predawn semi-dark outside, not much to be seen yet. What we can see is bad enough. Coconuts appear as light grey lumps, everywhere. The house is still there, to my

relief, though it's missing half the roof. There are watermarks halfway up the walls, same as on the shelter. As the light grows we see more damage, but all of us head for the sea first off. It's harder going than usual; lots of bananas are down. Not the coconuts though. They're standing tall, despite losing half the crop to the wind. That wind is beginning to rise again—the storm must be on the move. The edge of the paddock is a *lot* closer than it used to be. But as soon as we reach the sea's edge, our attention is all taken up by the sight of a sail in the choppy waters of the bay. My sister is the first to speak.

"Hurry up!" she says. Bossy, always. "It's Dad!" We tear down the sandy slope, because it *is* Dad, rowing ashore in a tiny dinghy.

There are hugs, of course, and tumbling exchanges of news. We all go back to the shelter. Dad's been up all night battling the storm and needs to sleep.

He smiles at everyone. Granpop's crying.

"Funny thing," Dad says. "I lost my compass, GPS, everything. Thought I was a goner. But this morning, something bumped on the hull. There was a trail of coconuts floating on the current all the way home. Like a gift from Tangaroa."





Melissa Gunn (she/her) is based in Ōtautahi, Aotearoa New Zealand, where she is currently a full-time mom and writer. She holds a doctorate in conservation biology. She has independently published YA climate fiction and urban fantasy novels, as well as song and fact books for kids (the latter with her songwriter sister).

Molly Mendoza is an artist living in Portland, Oregon. Through their work, they explore the complex emotions of interpersonal relationships and self-love with a focus on layered visual storytelling, mark-making, and color. They write stories, they paint murals, they teach students, and they draw.



Chapter Eleven

Stasis

A desert dweller undergoes a rapid and enlightening metamorphosis to survive the seasonal migration.

Author: Lovinia Summer

Illustrator: Carolina Rodriguez Fuenmayor

My friends sent me their best wishes with hugs and honey-drenched sweets. My parents hovered anxiously as the droids walked them through their scientific methodology twice and then a third time just for good measure. They held my hands tightly until the lead droid politely informed them that the procedure could not actually proceed while they were present. I will be stuck in this muted, sterile clinic room by myself for the next few days.

“It will be uncomfortable,” says the lead droid, “but it will work.”

I nod and shiver. It puts a silicon palm on my forehead to calm me, though I realize later it was likely only taking my temperature. My room is gray and has a tall window cut into one side which frames the desert and her sky intersecting at purple mountains off in the distance. The droid sees me watching and smiles.

“Only a few more days,” it says as it attaches a few sensors to my arms and neck. It leaves me to get undressed.

It is one week until March, and my mother and father have almost finished packing up the house. Everything worth taking has been tied up in neat parcels and then loaded onto caravans the size of small houses. Outside, the tarps and colorful clothes that shade our streets have been folded away and tied over doors and windows to keep the dust out. The sun will bake the roads and blind those who leave the comfort of their homes in these last few days. The city will be resting and drinking in anticipation.

I remove my clothes and watch as sand and small rocks that have accumulated in my pockets tumble out and onto the clinic floor. I take my time shuffling the pile of dirt into a corner of the room with my feet. I run oil through my hair with a comb and plait it into four horns curling against my head. I wipe off the dust that seems to permanently reside in the creases of my elbows and on my eyebrows. On the days when my siblings and I come home from spending all day outside, my mother will call us her dust bunnies or her desert hares. My father will say we are walking geological monuments and will shoo us towards the bathroom.

There is a thick, white robe on my bed in which I wrap myself. It clings to my body with a comforting pressure. When the droid returns, it is holding a tray of disgusting-looking pills. It begins reciting origins. “The substance you are about to take contains spores nurtured in our city of Xayma by 16th-generation maroon descendants. It contains

ground powder from an unnamed plant grown on land managed by the Tepoles sustained by six liters of irrigated water. Sugarcane grown in Onyx by the Guardian Collective ...” The droid continues listing substances and their origins for what feels like another five minutes. I stare out the window, imagining the long journey some of these substances have taken, imagining the hands that wrested a living thing from the earth and the water condensing into raindrops to feed their growth. This is no small thing they’ve made for me.

The droid finishes its recitation with: “Do you honor this?” I nod. “Say it,” it commands. I’ve heard this query and response repeated so many times that the frequency of its use has diminished its meaning for me. Today, though, I need this to work.

“I honor this,” I say, willing as much reverence as I can into three words. The droid hands me the pills and I swallow them dry. It watches them slide down my throat and then ensures my robe is completely around me, covering my feet and pulling the hood over my head until I am fully swaddled. It takes one last glance towards my vitals before leaving me in my clean little room. I settle into my cocooning robe and wait anxiously for some sign that my body is changing.

Metamorphosis is somewhat of a superpower. Most of us believe that metamorphosis is the latest step in the long evolution of our ancestors’ survival. First there was the bitter perversion of biological discrimination, then the precision of oligarchy, and of course now, the rather poetic chaos of ecological feedback loops nudged too far in one direction. Always, we have survived, bobbing, weaving, and sometimes forcing our way into a brighter and more joyful existence.

For my family and the rest of my city, metamorphosis is an easy process. They take one pill a day for a week, and their metabolisms shift unnoticeably under sun-burnished skin. By the end of the week, they are ready for Road March. Without metamorphosis, the shadeless, water-scarce journey

from desert to sea and back again would be almost impossible. With metamorphosis, for those few weeks of Road March, moisture becomes abundant, pulled out of dry air. Marathons of miles become leisurely, and the heat of the sun feels like velvet on skin. Our city transforms from a quiet splotch in the middle of a quieter desert into a loud line of traveling carnival for two weeks, and then once arrived, back into a quiet dot, this time by the sea. We sleep head to toe and breathe each other's air. We paint our faces the color of jewels and smear blue, green, and yellow on brown skin. We hang gold metal from soft earlobes. Shells from our sea that have been carefully stored from our last return trip are retrieved from their wrapping and gently nestled into clouds and braided rows of our hair.

But the best is the music. Steel drums will sing out something that bubbles in my chest, while the bass will call to whatever beast is sleeping under our feet. Sometimes the rhythm teases our heels and toes as they graze the ground in time. Sometimes there will be only the bass of the drums between our footsteps and exhaustion. By the time we reach the sea, bodies will have faded back into homeostasis.

I cannot remember the last time I had this luxury. I had been just leaving my years of awkward self-consciousness and was finally learning how to catch a rhythm when my body decided to reject the drugs that were supposed to save us. As such, I have had the distinct pleasure of spending what should be a euphoric two-week journey in a state of severe dehydration and painful delirium. I stay stubbornly hot-blooded and water-dependent, while everyone else is dancing in the desert heat like little sun gods.

Outside, the sun is setting a violent orange, a warning of the impending dust storms spinning in our direction. Back at home, my father will be rising from his late afternoon nap to scrounge up something that will resemble dinner. My mother will be lounging on the couch with heavy eyelids and a cup of steaming tea. My siblings will be asleep until the

fragrance of dinner calls them to the kitchen. It is a calm week. No hallucinogens, no wine, no liquor during metamorphosis week.

I do not remember falling asleep, but when I wake, my muscles are cramping painfully, and I am nauseous to the point of vomiting. My limbs are contorted against my body and I feel as though I am being slammed against something again and again. I twist around in my robe until I find an opening through which I can peek out. I scream, but no sound leaves my throat.

I have been thrown over the shoulder of a well-muscled human back the color of rich soil. Legs are striding across the ground at a quick pace.

“Hello?” I shriek, but my voice is caught in my throat. The head turns to look down at me to reveal a sculpted cheekbone and an onyx orb where an eye should be, and locks piled regally on a slender neck. I open my mouth to scream again and kick at her back in a panic. She is impossibly large for a human. I see her mouth curve up the cheekbone in a smirk as she shifts my weight so that my kicks no longer connect.

“Where are you taking me?” I gasp. This time my voice works.

She shrugs. *They were doing it wrong.* Her voice reverberates painfully. She hasn’t opened her mouth to speak, nor can I feel the vibration of air in her lungs.

To be fair, they did everything right. Sometimes you just need a little boost. She chuckles. The sky above her is shocking blue, and I can see a fragment of the mountain against which Xayma is nestled.

“Where are you taking me?” I ask again. “Put me down!”

No. You’re in the middle of a metamorphosis. The significance of this barely registers, as I am still panicking and attempting to twist myself out of my robe and onto the ground. *Hush now. I don’t want to drop you.*

I realize we have been walking across the roof of the clinic, and my stomach unclenches a bit as I realize we are still in Xayma. It clenches back again as we reach the point where the clinic roof meets the mountain face. She adjusts me so that she can tie my robe around her chest and begins climbing at a terrifying speed. I am frozen with fear. Below me, I see the city sprawled out like a miniature map. I see the caravans lined up at the city's edge and a lazy river of humans flowing around them. Toward the center, the flea market still boasts a mosaic of colorful tarps. It is always the last place to be packed up before the March. To the north glints the glass of the greenhouses and the large round domes where the water pumps and recycling stations are located. The city ends abruptly at the line where the mountain's shade ends in the afternoon sun.

"Where are we going? I ask again. *Not far. Relax*

That is a tall order, given that I am still uncomfortable, jumbled in my robe-turned-carrying-sack. The climbing finally stops when she pulls herself up into an opening in the side of the mountain. We are standing in a cool, dark cave, and our journey shifts from vertical to horizontal.

I don't know for how long we are walking, but it feels long enough that we must have crossed to the other side of the mountain. The light from the cave opening has long disappeared, and I am blind in the darkness. The tunnel tapers and her immensely large body must crawl to make it through. She swings me around so that I am hanging from her chest. Several times I must turn my face into her body to avoid grazing my face against the rock floor below us.

At one point, the temperature begins to change. There is a warm breeze of fresh air carrying a smell I have only encountered a few times before on school field trips in grade school. Verdant. That is the smell.

It becomes stronger as we emerge into a light-and-greenery-filled cavern. I stare open-mouthed. She places me

gently on the dark earth and stands to her full height. She must be maybe 10 feet tall. *Alright. Let's get to work.* Tattoos the color of flame dance across her face. She is wearing a loose blue tunic that bares her arms and legs, all of which are deeply muscled. I try to avoid staring at her eyes. *Dig,* she commands. I open my mouth to protest.

The hum of the droid opening and closing the door pulls me back into my room. It places a meal on the table next to me (yams from Xayma greenhouses, collards from Xayma greenhouses. Do you honor this? Yes, I honor this). The stars are out now, and based on their position I think I have five or so hours until sunrise.

Soon after my meal, my nausea starts up again. I brace myself to meet the tall woman again, but there is no such relief. I feel as though I am being whipped around the periphery of the room like a centrifuge. I am separated into water, carbon, and whatever else fills my interstitial spaces. I don't know where my edges are, but I do know that I am no longer contained by skin cracked from desert aridity. Whatever holds me is soft, putrid, and dissolving. I cannot see or breathe, but I am not afraid. I have been this much of nothingness, and I remember how to pull myself back together. I stay there in a puddle with only my cocooning robe to outline my shape. Then I begin to define myself. I build my legs strong and long. I make my capillaries taut and elastic. I divide cells and direct them in infinite directions. I stretch tendons, cushion bones with cartilage, and then I wait. I have done this before.

The cavern is still filled with light and lush greenery, but my 10-foot carrier is nowhere to be seen. I am covered in rich soil that sticks to me with much more persistence than the orange dust I am used to. I find my legs are working, so I rise and find myself staring into her endless orbs. She is no longer 10 feet, but my height. The orbs shift as though she is looking me over. She smiles. *Well done.* I cannot tell if she is talking to herself or to me.

Then I am back in my room in the clinic, still safely cocooned. I let the sterile smells of the clinic and the cool of my room wash back over me.

“You are complete.” The droid is standing over me, checking my temperature and my vitals.

I pull myself up to a seat so quickly I see stars. “I’m ready? It worked?” It gently guides me back down to a horizontal position.

“Yes, we knew it would work. We have much data to review.” I hear a tinge of excitement in the droid’s voice. It leans over me to untuck my robe and begin removing the sensors.

I want to cry with relief, but my body refuses to waste the water.

“The March begins tomorrow morning.” It gestures to my newly cleaned clothes at the foot of my bed.

I look down at myself. For all the shifting and spinning that has taken place inside me, I look very much the same. My mole on my right wrist is in the same place, there are still some grains of dust under my fingernails that I could not clean out. My heart pumps emphatically, and I have rich elastic skin which feels impenetrable. I turn to the droid.

“Thank you.”

“You’re most welcome. We will be following up remotely during your journey to confirm success.” It whirs out of the room for the last time.

Outside my window, it is dark. The city lights glitter orange below me, and beyond it the desert stretches dark and endless. I pull out my four braids and comb them out to frame my face. I rub oil over my skin, which is stretched over newly defined muscles. I feel ripe and thick like a fruit in the summer.

The sky is starting to brighten when I finally step out of the clinic into the night’s heat. I shoulder the pack my mother left for me and break into a light jog toward the road.

My muscles no longer ache, and my brain feels fresh and sharp. I can taste what little moisture there is in the air as it is drawn into my lungs.

At the city's edge, a crowd is growing around the line of caravans. Their wind sails are splayed on the ground in front of them, waiting to catch the desert winds. Solar wings are tucked neatly away, waiting for the imminent onslaught of photons.

I join the crowd, moving through the throng on my newly strong legs. A few familiar bodies reach out to grasp my arms in congratulations. They know that I have been waiting anxiously to join the March. I know they have been waiting anxiously to see if our gift of metamorphosis had been rescinded. I smile and see the relief on their faces.

I find my mother at our caravan. Her face is contorted with worry, but it breaks into a wide smile as soon as she sees me. Both my parents smother me into an embrace.

"You look brilliant, my dear," says my father.

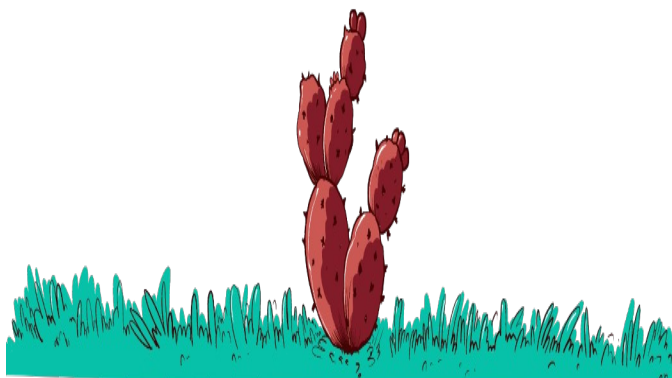
"Come," says my mother, giggling. She is giddy with relief. She pulls paint from her pack and paints me gold and yellow. Her fingers press into my cheeks to confirm I am here. When she is finished, the day is about to break, and we turn with the crowd to face our rising sun.

I blink, and then it happens almost as if by my command. Rays burst across the horizon, illuminating our city and the surrounding desert with the flare and gravitas of a thing that knows it is the center of our universe. Around me, there are cheers over the rumbling bass of the drums. My irises contract, and my face lifts to greet the morning. Later, my mother will tell me that it looks like there are sun flares ringing my pupils. Later, someone will tell me that I look like the golden hour before the sun sets. Later, I will realize just how deep this metamorphosis runs and that I will likely not change back. The droids will call me an "unpredictable outcome." My mother will call me her little flame.

The horns of the caravan sound in the morning light, drowning out our city of several hundred thousand people. The sails are lifted, and solar wings unfold. Then the drums pick up a rhythm that lifts my feet, and the March begins.

Lovinia Summer (she/her) is a Brooklyn-based climate nerd excited about imagining a just regenerative future. She works in renewable energy and writes cli-fi stories to bring that future into reality.

Carolina Rodriguez Fuenmayor (she/her) is an illustrator from Bogotá, Colombia.





Chapter Twelve

The Blossoming

*A student seeking his purpose in life makes a discovery
that could revive a friend's vital research.*

*Author: Guglielmo Miccolupi
and Laura C Zanetti-Domingues*

Illustrator: Stefan Grosse Halbuer

A young man, about 18 years old, give or take, curly brown hair in disarray, weathered brown skin streaked with dirt, chlorophyll, and scratches, barrels down a steep slope on an electric mountain bike.

Cork oak branches beat him mercilessly as he careens through the trees, bobbing over roots and rocks like a rubber duck in a bathtub.

The young man's eyes are wide and he turns every now and again, cursing under his breath and pedaling even harder, as if all hell had broken loose and all devils were on his trail.

Well, maybe not all devils, but Satanás for sure.

Satanás, the aptly named, bad-tempered stud bull of Seu Nestor, the steward of the neighboring communal montado, had been steadily gaining ground with a young cow named Matilda when the human and his vehicle crashed through their secluded grove.

The scare had put Matilda off her mood and she had left the grove with a haughty swish of her tail, leaving Satanás to nurse his wounded pride.

Not one to spend much time on self-reflection, nor to forgive and much less to forget, the bull had swiftly decided that the best course of action would be to run after the wheeled human and give them a lesson they would not easily forget.

“Go away, you overgrown cow! Go away!” Nuno yells at the top of his voice.

He puts in another burst of speed and dodges between two trees to try and shake his bovine pursuer off.

Centuries of selection for athleticism, fearlessness, and not taking crap from any living being have gifted Satanás with strength, speed, and stamina, but fortunately not with wisdom, or the capability to make complex decisions under pressure.

Heedless of anything that is not gaining on his quarry, Satanás charges forward, muscles bunching under his glossy black coat.

He looks like the cover model of a bovine equivalent of Men's Health: vigorous, athletic, a bull who doesn't have to ask ...

And then he ends up stuck between two trees, like an idiot.

Satanás moos and bucks, but he's not great at reversing, among other things. All he can do is watch Nuno slip away between the oaks and the olive trees and simmer in frustration.

The young man lets out a sigh of relief, but it is short-lived.

In his haste to get away from Satanas, Nuno had not noticed exactly where he was going.

A convenient and suspicious pile of wood acts as an almost perfect ramp and before he knows it, Nuno is flying, arcing high over the fence of a montado, and then down a slope covered in loose scree.

The young man screams at the top of his lungs.

By some kind of miracle he manages to keep control of the bike, and keep himself on it, bumping and rolling downhill until he finally hits the bottom of the slope and a patch of grass between the trees of another montado, lower down the hill.

He pulls hard on the brakes and puts a foot down for good measure, dragging the bike in a wide arc around that pivot point and opening wide furrows in the grass with the wheels.

Dripping in sweat, he takes a deep breath and pushes his curls away from his eyes with the back of a hand, and lightly pats his jacket.

The flower that can save Neusa's project is still there, in his inner pocket, none worse for the wear.

Satisfied, he takes a deep breath and a moment to examine his surroundings.

The first thing he notices is the sheep.

A lot of sheep, fluffy white or brown, who eye him with interest but without fear, munching their clumps of grass and going "Baa!" between themselves as if holding a conversation he is not privy to.

Nuno feels self-conscious for a moment, worried that perhaps the sheep are making uncharitable comments about the state of his clothes and his hair, or about his cycling moves, as if they had seen better, and then he notices something else.

The shepherdess, mainly.

Hard not to notice her, really.

She looks as tall as a tree, and just as wide, the kind of person who could wrestle Satanas into a pretzel, or fight a bear for fun.

“You?! Again?!” she roars.

Nuno points at his chest in confusion.

He is sure he’s never met this shepherdess before, he would definitely have remembered her if he had, but she doesn’t seem to care.

“This is the last time you lot pull this kind of stunt! I will take that f—ing ramp and those s—ng bikes and make you eat them!” she yells and takes a threatening step forward.

The ground shakes faintly under her feet.

Nuno makes another swift decision and starts pedaling again at full speed.

A quiet, inquisitive “Baa?” resonates throughout the clearing.

A few more “Baa!” answer the first call, and then, in a clanging of bells, the whole herd of sheep starts moving like a single organism that trots and clangs and goes “Baa!” united in single-minded pursuit of Nuno’s retreating form.

“My sheep! You—!” the shepherdess yells in the distance.

“I haven’t done anything!!!! Stop following meeeee!!!!” he yells back, without daring to turn.

The lead sheep produce a slightly louder chorus of “BAA!” but do not alter their course, pouring down the trail after him like the foam of a carelessly tipped cup of cappuccino.

And how did we get to this, dear readers?

Well, if you have the patience to follow me into this flashback, we will swiftly find out.

Generally speaking, everything started about 13.78 billion years ago, give or take some 20 million years, with a sudden explosion, but, while correct, this fact doesn't add much information to our narrative.

In a more narrow sense, everything starts on a Tuesday, the 13th of March to be precise, at exactly 7:01 a.m. Lisbon time.

The Dawnriders are in the water, just off the beach of Carcavelos.

Even though the rising sea levels of the Late Stage have "drowned" many surfing spots, Carcavelos has been partially spared, so Nuno and his friends are sitting astride their boards, waiting for the next set of waves that is soon to arrive.

In the meantime, they chat, joke, and laugh. Or, rather, they would do so normally.

Today the conversation is a bit more subdued, a bit more serious.

Ana, the oldest in their friend group at almost 19, has completed all the learning milestones required for a basic education curriculum and is leaving the Instituto Popular de Saúde Ambiental e Biorremediação, or IPSAB, training programs, where they had all grown up and learned since they were toddlers, to join the Hospital Egas Moniz down in Belém to start her training as a medical professional.

They've all been to the hospital's community learning center for learning activities about the human body and the mandatory first-aid courses, but she is going there to stay.

She will even live around there, in a multigenerational housing collective next to the hospital, so she can be fully absorbed in the doctor lifestyle.

This is her last session of weekday surfing for a while, perhaps a long while, but she doesn't seem so sad about it.

She will miss this, and them, sure, but everyone can tell that her sadness is offset by the fact that she can finally, finally

reach the shining horizon that she has been chasing her whole life and pursue her vocation full time.

She is almost vibrating with excitement at the idea, and her enthusiasm is infectious.

She is the one with the most solid idea of her future, but most of the others have plans.

João wants to join the Guild of Engineers and learn how to fix people's houses and appliances.

Janice instead is dead set on being a data modeler at the IPSAB and turning piles of environmental data into condensed dashboards that communes, concelhos, and ayuntamientos across the Iberian Bioregional Federation can use to make informed decisions on the management of the commons.

Fernão and Luciana want to be cooks, or perhaps bakers, and help their grandmother at the local Food Sovereignty and Abundance Guild, and Messias knows he has a berth on his mother's schooner ready for him, and has already sailed the trade route to the Caribbean several times as part of his training at the Guild of Navigators of the Grande Lisboa commune.

And finally, Neusa wants to stay at the IPSAB and study the relationship between rare orchids and trees in the montado.

Nuno is the only one who doesn't have a vocation, a plan, or even any real ambition.

He likes the life he's living now, likes to learn and help the IPSAB community wherever and however he can, from kelp-forest restoration projects and field measurements to simply cleaning floors and hauling stuff around.

He doesn't mind lurking on the Mutual Aid boards for the commune and helping out, wherever there is need, but the IPSAB is where his heart is.

The variety of tasks makes him feel like every day could bring new surprises and experiences, the present unfolding before him like a gift, and the knowledge that he is

helping understand and restore the rest of nature gives him a sort of satisfaction that he cannot even express.

He knows he doesn't have to change if he doesn't want to.

It's not like in the Late Stage when you had to find a workable, valuable niche and stick to it like a clam on a rock to make a living. There is no obligation to specialize and find one's niche to maximize productivity.

The Universal Basics, things like guaranteed housing, health care, education, and food, ensure that everyone has a good, dignified life no matter whether they can work at all.

People work because they like to, as much as they want to, and a lot of people don't have an old-fashioned career.

Nuno likes what he does, and has always imagined he would keep on doing it until he was too frail or sick to continue, but faced with the shining certainty of his friends, for the first time he feels that he might be missing out on something.

Perhaps he should try out a purpose, just to see how it feels, he reflects.

He is so immersed in these worries that he completely misses the timing on his next wave and gets thrown off the board, arse over teakettle, and churned up like a rag in a washing machine.

Rookie mistake to try and catch a wave while thinking of something else.

The Sea is a jealous mistress, she wants her people's thoughts to be only of her, and she quickly withdraws her favor from those who break the covenant.

Nuno spits out what feels like a liter of water and climbs clumsily back onto his board, head still spinning.

"You OK, mate?" João asks.

Nuno coughs up more water and nods.

"All good," he lies.

João nods back at him and paddles away, lining up for the next wave.

Nuno follows, a bit slower, waiting for the cold water to soothe the bumps he just acquired.

Perhaps he should try out a purpose, just to see how it feels, he reflects. He could just pick one that could work for him and run with it for a while and see if it does something for him.

Role-play it for a bit.

If he is missing something, he will know and will be able to make changes to his life.

He nods to himself again, feeling his inner turmoil evaporate with this decision.

The sea rewards his newfound inner peace with a perfect overhead wave.

It rises unhurried, with stately grace and power, deep green at the base and nearly transparent at the summit, sending rainbows flying in the air from its spray.

Nuno paddles, a frantic burst of movement to intercept the wave, and he can feel the moment when the movement of his board and that of the wave match exactly, and the wave takes over, alive under the wood.

Another burst of motion and he's on his feet, hips twisting, feet shifting, his whole body moving in concert to turn all that energy into motion, a dance back and forth on the edge of the wave, until it breaks on the shore.

The Dawnriders are still complimenting him for his radical ride when they haul their boards back on the comboio suburbano toward Cruz Quebrada, hair still wet and salty from the sea and sand on their shoes.

Nuno drops his board in the board rack just outside the department of agroecology like every morning and climbs up the stairs to the office he shares with the remaining Dawnriders and a bunch of other learners of various ages, grouped by educational milestones.

He checks his messages on the ConvivialNet terminal on his desk. Thankfully, there isn't anything either urgent or

important in the inbox, and his next group learning session on bioremediation isn't until the afternoon.

His groupmate Sunita is holding the weekly presentation on the importance of pill bugs for heavy metal capture.

He was kind of looking forward to that, but now his mind is completely absorbed by his new quest.

He loads up the federated search engine and pulls up a selection of articles from magazines, newspapers, and personal blogs about how it feels to have a calling, a vocation. He reads fast and takes notes, illegible scrawl spreading all over several virtual sheets of his e-ink pad.

He reads and reads, but none of the feelings these people have for any particular discipline resonate with him. Undaunted, he pulls up new information, researching the professions most likely to become a calling.

He immediately excludes the religious officer path and the medical professional one. He feels no particular spiritual inclination, and while he likes to help people, he doesn't feel like he would have the stomach for poking in people's innards to do so.

Firefighter is similarly discarded, as Nuno is terrified of both fire and heights.

One by one, Nuno examines and sets aside most of the vocations discussed in his first set of research materials, and by the time Sunita's presentation is due to start, all he's left with are baker and teacher, and the timetables of the baker's calling would require him to drop his dawn surfing sessions.

Teaching it is then!

Buoyed by the finding, Nuno almost floats into the auditorium, and understands maybe half of what his friend is saying, mind abuzz with excitement.

He is going to be a teacher!

Well, at least he is going to try out.

But that's already a start, a direction, and it is more than he had in the morning.

After the peer-learning session, Nuno skips toward the academic advisory and mentorship office.

If the people in there, all permanent or community researchers at the IPSAB, find anything strange in his request to be put in one of the accelerated teacher training programs, they don't say anything, and within a week, Nuno finds himself invited to advanced pedagogy classes at the IPSAB and in other venues across the Greater Lisboa.

He zips to and fro on public transport, his surfskate, and his e-bike, taking part in peer-learning activities about non-hierarchical pedagogy, unschooling, and the facilitation of peer- and group-learning activities for people of different age groups.

There is even a course about how to provide effective mentorship in research, and one on how to set up memorable nature-based learning "camps," for example, about permaculture or agropastoralism.

Nuno absorbs everything like a sponge. He finds everything interesting and enjoyable, but so far there is no spark, no light on the road to anywhere, no epiphany. Days and then weeks and months pass.

The Dawnriders surf at dawn, but sometimes he has to miss it because the lessons are across town. Likewise, he misses the olive harvest drive because he is busy putting together an educational exhibition on the structure of a food forest together with a group of peers to have it judged by children in the 8- to 10-year-old cohort for clarity, quality, and interactivity.

It's frustrating, but he tells himself that it will be worth it in the end.

Eventually, almost a year into the course, the mentors decree that he is ready enough to tackle some actual educational activities, shadowing more experienced educators.

He arranges things to make sure it's field education and meets his teammates, Luiza and Marina, a pair of sun-

browned twin ladies in their 40s who will take children on educational foraging trips up the hills over the general holiday between the 25th of April and the 1st of May.

Buoyant with excitement, he shows up at the now-weekly meeting with the Dawnriders at Carcavelos beach, ready to share the good news with his friends, but as soon as he arrives he understands that the mood is not quite the right one for a celebration.

“They have destroyed my work ...”

Neusa has been crying. She is not quite crying now, but she must have been until not long before. Her eyes are red and puffy, her cheeks are blotched with red, and she is still making little sniffing noises every now and again, and blotting her nose with her flower-printed handkerchief when she thinks nobody is looking.

She tries to pretend that everything is alright and nothing has happened at all, ever, but her attitude doesn’t last long when faced with the determined concern of her friends.

“They have destroyed my work ...” she confesses eventually, sobbing her heart out.

The whole gang has abandoned the idea of a surfing session and sits in a circle around her on the still-cold sand as the tide goes inexorably out, as it is wont to.

The research proposal on orchid symbiosis that she has been working on for the last few years with the help of her mentoring group has just been submitted to the wider scientific community via the federated reviewing portal that links all of the Institutos Populares across the world.

“Some folks from the Chiapas and the Cascadia institutes said the project is weak because I didn’t have any specimens anymore, and I couldn’t be sure I would find others,” Neusa half-explains, half-wails.

Oh, that explains it, Nuno thinks.

When Neusa had started working on that particular kind of orchid-tree relationship, she had a perfect patch of little pink flowers growing around the base of a very old cork

oak tree, seemingly forgotten in the middle of a montado up the hills behind Cruz Quebrada.

The little pink orchids sprouting all around her for exactly a fortnight in mid-April were completely unassuming, except for the fact that somehow they were one of the very few species of local flowers that formed a mycorrhizal connection with fungi and trees, through the wood wide web, throughout adulthood.

Neusa had been studying that particular tree and its mycorrhizal community for close to three years, and she thought she was close to figuring out why the fungi let the orchid stay connected, and then Grandma Oak was fried by lightning in a winter storm, and the orchids followed her into the great big primary forest in the sky.

And now all Neusa has are half-finished results and no other leads. She is sure that she can find another ancient oak with her little troop of orchids somewhere, given time, but until she does, her rite of passage from student to scholar is in limbo.

By the time Neusa has finished unburdening herself, the sun is already quite high in the sky and the tide is well out.

The Dawnriders pick up their boards, fold their wetsuits back in their backpacks, and disband, but not before promising that they will keep an eye out for ancient trees and for her orchids during any trip to the countryside.

Nuno takes that promise particularly to heart. He'll be traipsing through the montado for a week; he'll have the best chance of finding something among his friends, if there is anything to be found at all.

If he didn't have a few days of lessons left before the end of the course, he would just grab his bike and scour the hills top to bottom for them, but he bides his time.

No matter how viscerally he wants to help Neusa, he also needs to focus on his plan. He cannot waste a year and change of trying to figure out whether teaching could be his purpose.

The holiday couldn't come soon enough, though, and finally Nuno finds himself at the bus stop in a little farming village above Queluz, waiting alongside his two mentors for his first batch of students.

He's read the risk assessment, reviewed the plan for their teaching activities, and had a final read-through of his non-hierarchical pedagogy cheat sheet.

He's as prepared as he can be, and yet he cannot help the feeling, not quite fear but also not quite excitement, that tingles down his spine.

It takes a good quarter of an hour of last-minute kit checks and uneasy shifting in place before the school bus arrives, and with it the students.

The kids are about 8 to 10 years old, very energetic, and mostly interested in what he and the other two educators have to show them.

They ask a lot of questions, examine everything, and make the appropriate oohs and aahs at the right time when shown something cute or cool.

They are alright little humans, and he feels proud of having contributed to kindling or fostering their love of nature.

He doesn't hate the experience. It is quite fun, in fact, and he can see himself doing more of it, every now and again, but once again there is no revelation.

The world doesn't shift on its axis, and he doesn't feel like any extra bit has slotted itself into him, making him see things in a new light, like the materials he had used for research suggested he would.

The montado is a nice place and the kids and his mentors are cool people, but that's it.

The weight of this lack of realization is so heavy on him that at the end of the workshop he finds himself sitting on the grass in the middle of the cork oaks, head in his hands.

He is so immersed in his miserable reflections that he doesn't notice that Luiza and Marina have taken a seat on the

grass next to him until one of the two (he can't quite keep them straight yet) puts an arm around his shoulders.

"Are you alright, kid?" she asks.

Nuno is determined to bluff his way out of it and pretend everything is alright, but somehow the words get stuck in the huge lump that has formed in his throat and, before he knows it, he's started bawling his eyes out like a baby.

Luiza (or Marina, who knows) puts her arms around him and lets him bury his face against her shoulder, while the other twin pats his back reassuringly, murmuring reassuring platitudes.

"Not everyone needs a metamorphosis in their lives."

It takes a good 15 awkward minutes before he calms down enough to stop sobbing, and when he does, all the things he's held inside for more than a year, all the things that he's never said to his family, his friends, or his mentors at the IPSAB, they all come tumbling out of his lips, all at once, a litany of worries, frustration, and feelings of inadequacy.

He hardly knows these two women, and they hardly know him, and yet here he is, letting his heart spill out of him like water from a burst dam.

"Is there something wrong with me?" he wails.

"Of course not, miudo!" Luiza (or perhaps Marina) reassures him.

"Then why ...?"

Why doesn't he feel like he needs to spread his wings and fly away like his friends?

"See, that is the problem! You assume that because your friends are like butterflies, you must be one too, but not everyone needs a metamorphosis in their lives."

The other twin taps a finger against her chin, deep in thought.

"Every person is different, and it's not like people need a calling to be complete. Being alive and experiencing life is purpose enough, don't you think?"

Nuno cannot help but nod. That's what he's always thought.

"It's just that ... everybody except Janice and Neusa is leaving, and even they have all of these big plans to specialize and become something else, and I ... I just want to be plain, old, boring Nuno, helping around at the IPSAB and in town. I am happy as I am."

"If you're happy and you feel like you're living life according to your values, you are already in a good place."

Marina (or perhaps Luiza) nods.

"Better than where most people were in our parents' generation for sure," the other twin agrees.

"And at any rate, if later in your life you find something that you enjoy even more, you can always retrain."

"Yes, like we did. We started out as shepherdesses, but it was too boring, and we were always misplacing some sheep because we were too busy looking at bugs."

"So we did entomology for a bit, but eventually we figured out we liked to teach better than to research."

"So now we're back in the montado, but at least this time we don't have to worry about what the sheep get up to."

Mildly disoriented by the back and forth between the twins, Nuno listens and nods. Everything they say makes sense. It makes a lot of sense.

This is no big tragedy, just a minor bump in the road toward figuring oneself out. And it's not like he's wasted his time. All the extra training will make him extra useful to the IPSAB and the community of Algés.

In that moment of understanding, it seems to him that the skies have gotten clearer, the little birds are singing louder, and the flowers are dancing in the sun and the breeze.

He feels like he's about to break into song like a cartoon princess, when his eyes slide once again to an unassuming patch of little pink flowers clustered around an absolutely massive, twisted, and gnarly cork oak.

The sugary pop music soundtrack that was playing in his head scratches to a halt and he bolts to his feet, fumbling his ConvivialPhone out of his pocket with trembling hands.

He ignores the twins' mildly alarmed questions and checks the flowers against the pictures Neusa sent. He checks them once, and then again, more closely.

It can't be.

The odds are, like, ridiculously low, and yet, somehow these are Neusa's orchids around their Grandparent Tree.

He tries to steady his shaking hands and takes as many pictures as he can, from all sorts of different angles, then harvests a flower and places it in the inner pocket of his jacket.

Neusa might want to have its DNA sequenced to make sure it is the same species as her previous samples.

"I gotta go," he tells the twins.

"You ... why? What happened?" one of them asks, but Nuno has already jumped on his bike and is barrelling downhill at full speed.

"You better come back tomorrow! Do you hear me?" the other yells.

And this, dear readers, is the story of how Nuno ends up racing down the path by the river Jamor with a whole herd of overenthusiastic sheep galloping after him.

Entire educational cohorts of coaches and physiotherapists pause in their training at the Jamor Sports Centre to watch him pass.

Several cyclists, runners, dog-walkers and their dogs end up jumping in the river to get out of his path.

Buses and trams honk their horns, people scream and cross themselves, and at least one woman gives birth (correlation, not causation) before this bleating, smelly vision of the apocalypse skids to a halt in the front courtyard of the IPSAB.

Covered in sweat and debris, Nuno jumps off his bike and breaks into a staggering run toward the office.

A few of the bravest sheep try to follow him into the building but are eventually defeated by the automatic doors and a few determined researchers, and are left outside to bleat their outrage at being excluded from further adventures.

Blessedly unaware of the stand-off between his colleagues and his wooly groupies, Nuno zips down the corridors and up the stairs, scaring the hell out of everyone and causing several health and safety near misses.

He slams open the door to the shared office and, carried forward by his own momentum, crashes to a halt against a desk.

“Nuno! What the hell?! I am in a meeting!” Neusa protests, jumping from her chair, headphones clattering against the worktop.

On the screen a few faces look on, mildly perplexed.

Out of breath and out of steam, Nuno extricates himself from the furniture and shuffles forward on weakening legs.

“For you,” he manages to rasp.

The orchid doesn’t look like much, especially after what it has been through, but Neusa recognizes it immediately.

She lets out an almighty shriek of delight and somehow, even though she’s about half of Nuno’s size, she manages to pick him up and spin him around like a doll.

“You’re welcome,” he croaks as he slides to the floor.

Neusa straightens up and marches to her triumph, orchid held high.

The people on the other side of the screen look cowed and a bit confused.

Victory is almost assured.

And Nuno? Well, Nuno has just passed out on the floor, back against a desk.

He’ll regret it later, but now?

Now he regrets nothing.

Guglielmo Miccolupi (he/him) is an illustrator and graphic designer based in Milan, Italy, and Reading, England, and the founder of Commando Jugendstil. One of the initiators of solarpunk in Italy, he has led the Commando through several sustainability and public art projects across Europe, has contributed to the narration of several short stories published in international solarpunk anthologies, and has realized several illustrations depicting hopeful, sustainable futures, such as the postcards published monthly by Solarpunk Italia and Solarpunk Magazine.

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Part Two
On climate fiction and storytelling



Chapter Thirteen

Visions Beyond an Apocalypse

Science fiction writers explore better climate endings.

by Jonita Davis

Climate science fiction, or “cli-fi,” is having a renaissance, with writers like Kim Stanley Robinson and Emily St. John Mandel garnering national attention. Although the genre is recent, the bleakness of post-climate-change stories is nothing new in science fiction.

But not all of these stories are grim postapocalyptic journeys after climate catastrophes. In fact, a particular kind of cli-fi with themes of hope, resilience, and renewal has existed for years. Until recently, it's been the purview of authors from communities that are underrepresented in publishing. These books offer a new and socially responsible look at what Earth could be like after an apocalyptic event—written by authors who were already living in spaces damaged by climate change and who had survived horrors in real life.

Here's a look at a few authors who are writing cli-fi infused with some hope:



Omar El Akkad is an Egyptian-born Canadian American novelist whose books [*American War*](#) (2018) and [*What Strange Paradise*](#) (2022) are on a number of cli-fi lists. He explains that the term “cli-fi” may be a trend, but his stories are not. El Akkad says stories about or with themes of climate change are expected from writers today.

“I don’t know how you write any kind of story in the world today without having to grapple with, in some way, what we are doing to this Earth,” El Akkad says. “I’m not saying that every novel has to have a Category 12 hurricane in it or specifically address wildfires. But all literature is about what it means to be human. And right now, what it means to be human is to grapple with the place we live in and what we’ve done to the place we live in.”

He goes on to say that the term “cli-fi” is now more of a “designation of novelty than it is a designation of craft.” He expects the label will fade away at some point, but the topic of climate change will remain.

El Akkad's upcoming, yet-to-be-titled novel is "a sprawling mess." The story is about love and war, set in a time when climate change has devastated our world. "It's a story about love and revolution set in the final days of our species. It's a century and a half from now, in the distant future." Although he doesn't label the book cli-fi, he realizes that, like his previous two novels, the new one will "very much be called cli-fi."



Bangkok Wakes to Rain (2019), the runaway-hit debut novel by **Pitchaya Sudbanthad**, centers a clash of the modern Thai capital with ancient spaces, the rich and poor colliding in stories that carry the reader into a world not too far from the Bangkok that Sudbanthad grew up in.

The author says that the hope in his books comes from a reality that his culture knows all too well.

"I was projecting my imagination of my city and my people into the future. If they are to survive, then they are surviving in some kind of society that I don't think is going to be as apocalyptic or as dystopian as many people envision the future of climate change societies."

Survivors of any cataclysmic climate event would come out changed on the other side, but some parts of society would still bear some semblance to where they were before it all began.

"It's no coincidence that the things we live with extend back to the ways of the ancients," Sudbanthad says. "Even if it's how we consider time, or what we call time and the seasons."

For *Bangkok Wakes to Rain*, Sudbanthad says he was looking for a "continuity through immeasurable loss and

tragedy, and a society that survives that and is somehow building and rebuilding a vision of itself for the future and going forward.”

Hope is inherent in the moving forward part of survival, Sudbanthad says. And storytelling grounded in the reality of underrepresented people who are already experiencing climate change transcends any genre.



Sherri L. Smith's bibliography includes several young adult titles. Among her mostly historical fiction, *Orleans* (2013) stands out as a YA cli-fi novel about living through major hurricanes. In this story, a lethal virus has spread across the devastated Gulf Coast, with survival dependent on the victim's

blood type.

The book is based partly on the story of Smith's mother surviving the aftermath of Hurricane Katrina. This true story had a happy ending, which Smith considers an integral part of any story written for younger readers.

“I think all young adult fiction, all fiction for kids, should end in hope. It would be great if all adult fiction did too, but they seem to make money off of misery.”

That said, Smith says her focus when writing *Orleans* was not hope, but healing.

“I wanted to know, how do you heal this? How do you get out of the seeming dead end that we are headed toward?” For Smith, the cli-fi that kids read today is what fuels the solutions of tomorrow. Thus, the stories must include a bit of guidance toward actions people can take now.

“I think climate fiction is a necessity,” Smith says. “We’re the thought lab of humanity—writers, artists, and scientists. We need to generate questions so that the people

with the skills—you know, a lot of scientists started out as science fiction fans—can start springboarding off our wacky ideas and saying, ‘What can we do?’”

Smith described a conference she attended, where sci-fi authors, including herself, spoke to a room full of scientists. One scientist told her, “We have the science to save the world. We have the science to fix things. It’s not hard science that’s the problem; it’s social science. How do we convince people to do what needs to be done?”

We do it with cli-fi stories that can help them visualize better climate endings.

As we read more stories by people who traditionally did not have a voice in science fiction—people who have and currently are dealing with climate change in their communities—we will continue to see themes of hope. Because keeping hope alive is the key to humanity’s survival in both fictional worlds and the real one.

Here are more authors whose books on climate change hold themes of hope:

Bijal Vachharajani is covering climate change in stories that kids can understand, such as in her book *So You Want to Know About the Environment*.

Rebecca Roanhorse writes about whole civilizations in postapocalyptic worlds, injected with Indigenous characters and influence—check out *Black Sun* (2021).

Nnedi Okorafor is another cli-fi writer who also works in comics, but she is best known for her novels, such as *Who Fears Death* (2014).

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visions-beyond-apocalypse](https://yesmagazine.org/issue/endings/2023/02/27/visions-beyond-apocalypse)



Jonita Davis is a film and culture critic, author, and freelance writer. She has been writing for more than 15 years on topics exploring the intersection of pop culture, identity, education, parenting, and how those relationships affect our lives as parents, women, Black women, nerds, and people of this planet. She is the founder and editor-at-large of The Black Cape, and has authored several books, her latest being We Gon' Be Black Today: Exploration of Black Nerd Culture (Chicago Review Press, 2024). She is a member of the Hollywood Critics Association, International Film Society Critics, and is a Rotten Tomatoes independent critic. More of her work can be found at jonitadavis.com.



Chapter 14

The Radical Power of Storytelling

*Despite the distractions and anxieties of the modern world,
we still have the powerful capacity for wonder.*

By Martin Shaw

The business of stories is not enchantment.

The business of stories is not escape.

The business of stories is waking up.

Imagine, if you will, looking up into the dark and naming a star. You could be crouching in the moonlight outside a Dordogne cave, or peering up from a balcony in west London in the middle of a party as the music pumps, pumps, pumps. But for some reason we commit to gazing. And something happens when we, maybe rashly, give

ourselves utterly to the turbulent luminosity of the universe. We start to gabble in love speech.



So there you are, looking at the star. You could call it something like:

Flint of Whale Bone

Dream Coin of the Moon

Pale Rivet of the Sun's Own Spear

White Bridle of the Black Riders

This condition of wondering is still absolutely intact in us. It is. Amongst the loaded shopping trolleys of Walmart and Tesco, the fluorescent tech hubs, flicker-screens and finger-beckoning apps, it's still there. This raw, imaginative, holy thing.

There's an audacity to it, but it's what we've always done. We did it on the plains of South Dakota, we did it in the muddled byres of Shropshire, we did it on the vampiric tips of snowy Carpathian Mountains. And here's the thing: we did it to claim not ownership but connection. There's a swoon in this, a bearing witness, a startled affection growing to an awe. There is no flag planting, no home improvement planned, just giddy, magical naming. And maybe the star just named itself and used us to do it. Maybe it spoke through us for a moment. There's a health to this.

Much has been written about the human impulse to daub its spray on every living thing, to bellow the decree of its

franchise, but what happens when the earth itself gives a little pushback? When it's not us lacing a brocade of dominion-speak into a voidal dark, but that actually the words themselves may be the return journey of longing from the thing itself. That there's a scrummage of inspiration that is not only human. This is a reality that has been articulated from Amazonia to Renaissance Italy, from the Yakut to the Aborigine. That words can have fur and light in them. Words can constrict, words can liberate.

Bad storytellers make spells.

Great storytellers break them.

This, now, is mostly an era of spell-making. Of tacit enchantment, of stultified imaginations and loins inflamed by so much factory-fodder lust, our relationships malfunction in their millions. We are on the island of the Lotus Eaters, curled up in the warm sleepy breeze of a Russian fairy tale as the robber steals away the Firebird. How do we wake up?

I will give you a little plot-spoiler right here. Sounds so very deceptively simple. The secret is relatedness.

Relatedness. Relatedness breeds love, and love can excavate conscience. Conscience changes the way we behave. Relatedness is how we wake up. But I am going to take a long



and sometimes diffuse route to say it in the fashion that such a notion deserves. As I will repeat before the end of this book, be skeptical of the quick route. It's truly what's got us into a thousand unruly messes. And not the kind the poets praise.

There are stories about living without relatedness. They don't tend to end well. Without relatedness we dwell in a place the Inuit call the Moon Palace. The Moon Palace is a place that appears perfectly safe: we have a great view of the earth and its goings-on, but we touch nothing. We can spend years and years up there. Heartbreak will get us there. The cool of the Moon Palace is a very dangerous place to be. Likely there comes a point where you want to come back down. The old ones say the earth is only three steps down from the Moon Palace, but we have to keep our eyes open as we descend. If we are unconscious we become spiders that cause webs to trap everyone around us. In other words, we cast spells.



The three steps down from the Moon Palace are instigated by longing to connect, for heat, opinion, passion, the dusty market square of life. Relatedness is the way back, but doing it with awareness.



So. I want to know if the earth will still reveal its secret names to us. The only way we can know is if we as a culture take those three steps.

This is a book that makes a case for a world that still seeks our eyes on it. Our admiration. Our care. Our artfulness. And from that comes a particular kind of hope.

Amongst the clear-eyed of us, *hope* is becoming a word laced with some doubt, and rightly so. At least from a certain point of departure. When I speak to the climatic conditions of our time through the voice of a pundit, philosopher, attender to the seemingly divinatory crackle of “the facts of the matter,” I feel a blue note of utter sorrow that I can’t come back from. But I do not choose to look at the conditions of our times only through those prisms; there is another, more ancient device. Story.

Of course, myths speak of the endings of things, of any number of ruptures and rebirths, and are often thoroughly drubbed with grief and the tragic. Ragnarok or Revelation is always at hand. Some beast is always slouching towards Bethlehem. Everything falls apart. The child crawls into the snow and is not seen. But over time a shoot will emerge from a heap of ashes. A girl will walk back from the forest speaking a language no one has ever heard. This is less optimism, more observation.

I should reveal my hand here. I don’t believe our prayers always land this side of the river. I believe in a receiver. Even though what may wind its way back to us is in

some costume we never expected. Stories can actually be a kind of praying, a back-and-forth between us and the earth and its myriad dimensions. This is absolutely not the same thing as a wish list to the heavenly.

If you think you've only got yourself for company, you are on the quick road to crazy.

I'm not telling you what to pray to, the celestial-or-otherwise shape of the thing, but find something to adore and keep talking to it. It'll regulate anxiety at the very least. It won't remove grief, not useful remorse, but the grind of chronic or acute fear can find its expression as an alchemical progression, not a final destination.

Stories worth their salt don't tell us to get cranked up with either naive hope or vinegar-tinged despair. Stories tell us to keep attending to the grace. Keep an eye on the miraculous. It is not for us to blow the candle out; only the gods can do that. You simply don't do that as a storyteller. You have corrupted yourself at that point, broken covenant with magical possibility. You have forgotten your tribal function, your metaphysical directive.

So for a moment, I ask us to entertain possibilities, that's all. Put down the podcast or latest gut-churning piece of will-draining bad news, and let's crouch by the fire in the old way that is forever new. Somebody wants to talk to you.

*This excerpt from Courting the Wild Twin
by Martin Shaw (Chelsea Green, 2020)
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Martin Shaw, Phd is an acclaimed scholar of myth and author of the award-winning Mythteller trilogy, The Night Wages, and Life Cycle, his conversation and essay on the artist Ai WeiWei, was recently released by the Marciano Arts Foundation. Shaw created the Oral Tradition and Mythic Life courses at Stanford University and is the director of the Westcountry School of Myth in the U.K. He has been a wilderness rites of passage guide for twenty years.





Why Children's Stories Are a Powerful Tool to Fight Climate Change

*Children's ability to imagine alternatives to the way things are
may be the most powerful force for the
socio-economic transformation we need.*

By Marek Oziwicz

The power of children's stories resides largely in its audience: in how open young people are to new ideas. Their drive to experiment is familiar to any parent: Children invent new words, do things differently, and ask “why” about pretty much everything we adults take for granted.

For teachers, children's noncompliant curiosity is at once a source of delight and frustration. We know this curiosity lies at the heart of learning, and we strive to keep it alive by pushing against educational systems built on factory-model standardization. And while some dismiss youth “rebelliousness” as a stage—something to grow out of—what if it is really a refusal to comply with the wrong ways of doing things that adults have acquiesced to?

In this time of climate change and biodiversity loss, children's ability to imagine alternatives to the way things are may be the most powerful force for the socioeconomic transformation we need. It is childlike curiosity that allows youth climate activists like Xiuhtezcatl Martinez and Greta Thunberg to imagine that people like you and me, together, can

change the system to work for the planet. It is childlike honesty that empowers young climate strikers to say, much like the child in “The Emperor’s New Clothes,” that adults are caught up in self-serving illusions about eternal growth in the market economy. And it really takes a childlike power to believe that a sustainable, equitable, and multi-species future is achievable even as corporations are fracking like there’s no tomorrow.

I have studied children’s, adolescent, and young adult literature for 25 years. I believe it is the most diverse, innovative, and dynamic technology for social transformation we have at our disposal. I believe that young people are the most diverse, innovative, and dynamic audience. Put these two together, and you have a formula for achieving the impossible, for crafting visions that become reality. As we look for ways to tackle the climate emergency, stories for young people—in books, films, games, and other narrative media—emerge as a crucial tool for building universal climate literacy. This is how we transition to an ecological civilization.

It Was a Dark and Stormy Night

To offer a broader context, I want to make two suggestions. First, climate change is not primarily a scientific or technological challenge, but a challenge to our imaginations and story systems. Science explained climate change more than 50 years ago; the basic hows of climate science can be grasped by any middle schooler (even though most adults are still climate illiterate). Likewise, climate change is no longer a technological challenge: We have practical solutions, and we have all the technologies we need to stop burning fossil fuels. But try to imagine the 52.4 gigatons of CO₂ the world emitted in 2019. Or the 3 billion animals that perished in Australia’s fires in 2020. Much harder, right?

The point here is that our brains are hardwired for narrative understanding, not numbers. Our most advanced technology for meaning-making and processing information is called the story. We use stories to grasp and evolve abstract concepts like justice, we use stories to create and maintain

societies, and we use stories to guide our sense of agency and understanding of everyday reality. As Indigenous societies have known all along, “Let me tell you a story” enables us to grasp the workings of the world through narrative examples. Vanishing habitats and other aspects of climate change can be presented in numbers and charts, but the message gets compelling when it’s told as a story. Say, in Sir David Attenborough’s *A Life On Our Planet*, Mordicai Gerstein’s *The Boy and the Whale*, or Paolo Garcia’s “Dream.” To tackle climate change, we need a broad spectrum of stories that allow our imaginations to creatively engage with the many specific challenges of a climate-changed world.

My other suggestion is that literature and other narrative media for young audiences are not additional but the most important avenues for raising climate awareness. There are two reasons for this: depth and scale. Stories that move us do so on a personal level and change us from within in ways that facts alone never could. This is especially true of young people, most of whom respond to stories with emotional intensity.

For example, as one of my graduate students wrote last year, after reading *We Are Water Protectors*, her 5-year-old son declared, “I would help save the people and the animals from the snake. I want to be strong like a tree. Even if the snake scares me, I want to carry [the feather (representing resistance)] and be brave.” Stories help keep such commitments alive through college and beyond.

Scale matters too. The 52 million K-12 students in the U.S. alone read millions of books each year, for school and for pleasure. Stories in other modalities—films, apps, and games—engage even wider audiences: One estimate suggests that nearly 3 billion users play computer games every day. Imagine if even 1% of these stories inspired climate action!

Dispelling Myths about Climate Literacy

The need to center stories in climate literacy education faces two key challenges. One is the mistaken assumption that

people can be scared into climate action. This idea was behind the explosion of dystopia in literature and film starting in the 1990s and has since proved to be a false promise. Dystopias offered compelling visions of the future we dread but left little space for imagining the futures we want. Although meant as warnings, even cute dystopias like *WALL-E* have instead programmed a belief that ecological collapse is inevitable. As I have argued elsewhere, there is a growing realization that tackling the climate emergency calls for stories that inspire activism and mobilize hope.

The other mistake—one that has driven most of environmental and climate education so far—was to assume that climate literacy is solely a matter of communicating facts. This “knowledge deficit paradigm” in conceptualizing climate education was part of the naive “information deficit” framework that also drove climate science until quite recently: hoping that scientific facts is all that governments, corporations, and the public need in order to act. Sadly, the fight over climate change is not about scientific rationality but about the power of the fossil fuel industry.

In education, the “knowledge deficit paradigm” made us approach climate change and biodiversity loss as if they were STEM issues. But they are worldview issues. And the most advanced tool we have to change worldviews—to transform people’s attitudes, values, and structures of perception—is called the story.

Toward Universal Climate Literacy, One Story at a Time

Our global, technologically advanced, and market-driven civilization is a climate illiterate civilization. Its modes of being were designed on stories of conquest and exploitation. We’ve been at war with the planet, and we’re winning. To turn this around, we need universal climate literacy: an understanding of anthropogenic climate change that includes numbers and facts but centers developing attitudes and values aligned with how we should live to respect our planetary home.

Chapter Fifteen
Why Children's Stories Are a Powerful Tool to Fight Climate Change

We need an understanding that we are part of nature and that acting as if we're separate from it is a crime against life. Classrooms are ground zero for this effort. And stories are the technology that makes climate literacy accessible to every student everywhere.

Climate literacy should be front and center in 21st-century education systems, because our children have a right to choose the future they want. Climate education cannot be dumped on parents, even those deeply committed to raising climate literate kids. We, parents, educators, and public officials, need to do it together, systemically. This urgency is starting to be recognized in policy petitions, statements by educational organizations, blueprints for implementing climate action projects in every school by 2025, and polls showing massive support for climate education. Given this momentum, I expect that climate literacy will become the focus of our K-12 education frameworks within the next 2–5 years. We and our students are the generations that can become climate literate in time to make a difference for the planet's future.

Imagine that we teach climate literacy from kindergarten all the way up to high school and across all subject areas. Imagine we give our students story-rich examples to help them understand what is at stake and how they can be agents of change. Imagine we also empower them with vocabulary and concepts to articulate visions of sustainable, equitable futures. And imagine we give our teachers a resource where they can find books, films, apps, and other formats—including lesson plans—for teaching climate literacy effectively.

This is the vision for Climate Lit, a collaborative resource hub for K-12 teachers I co-founded with my friend Lara Saguisag in May 2021. We're in a pilot stage, assembling a team of contributors, editors, and advisers. With support from the University of Minnesota's College of Education and Human Development, we want Climate Lit to be part of Earth's commons, offering a database, glossary, pocket journal, events,

trainings, and anything else teachers may need to do climate literacy work. One story at a time.

We do this because we recognize that in our current socioeconomic system, any meaningful action on climate change is indeed a childish dream. But if this childishness—its audacity, directness, and hope—is the only way forward, addressing climate change is eminently a job for children’s stories.

The online version of this article has many hyperlinks to the books, people, and organizations mentioned.

It is available at [yesmagazine.org/opinion/2022/01/14/climate-change-childrens-stories](https://www.yesmagazine.org/opinion/2022/01/14/climate-change-childrens-stories)



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Originally from Poland, Marek discovered books as a child and was never the same afterward. He decided to become a wizard. The spell worked (or backfired, tough call!), and he became an expert in speculative fiction. Marek is a member of ChLA, IRSCL, IAFA, and ASLE. He is based in Minneapolis, MN, and speaks English and Polish. He can be reached at editors@climatelit.org or mco@umn.edu.

